THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

WITH WHICH IS INCORPORATED THE "BRITISH ARCHITECT."

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RAILWAY RATES AND BUILDING.

THE increased charges for railway transit, though they may not hit building so much as some other industries, are bound to affect prices to an appreciable extent, and the subject merits our consideration. We have always favoured the widest possible use of local materials, not only from the standpoint of economy in cost, but also in labour, and because nothing harmonises so well with its surroundings as material obtained from the ground locally. It is not our intention here, however, to recall the appropriateness of the flint churches of Suffolk, the severe stone buildings of the Northern districts, or the pleasing red tiles of our brick-earth areas. Our thoughts are on the less attractive theme of outlay, speed and practicability. Of course, the increased costs will be passed on to the "consumer," which means, in the case of small houses, that the tax-payer will be saddled with most of it. This is inevitable; but what we must see to is that profits are not added on the way—a much too frequent occurrence when charges go up. Fortunately, materials are used in bulk, and hence the practice of making the public pay an extra half-penny on an increased cost of possibly a tenth of this sum is less likely to occur than with commodities bought in smaller quantities; none the less, the matter wants watching. The statistics compiled by the Scottish Board of Health during the war were referred to in connection with this subject in the *Times* of January 1, and form a valuable guide. The actual weight of materials used in the erection of 100 small houses was ascertained and the average calculated; from which it would appear that bricks weighed 53.5 tons; ballast, curbing, sills and other stone, 30.3 tons; sand, 20.4 tons; Portland cement, 7.7 tons; timber, 5.2 tons; slates and tiles, 3.3 tons; cast iron, 1.5 tons; lime, 1.3 tons; drain pipes, 1.2 tons; while other items amounted to about 1 ton—making some 130 tons in all. If the rate for conveying bricks fifty miles be taken at 3s. a ton for full truck loads, and this as equivalent to about 7s. per thousand for average building bricks, the increased cost per thousand under the new rates will be about 3s. 6d. It is difficult to assess the number of bricks required as an average in cottage building, but if this is put at 25,000—a fairly liberal estimate—this represents £4 12s. 6d. on this material. The writer referred to estimates the increased cost of timber carried 100 miles at £2 per cottage, and Bangor slates brought to London at £1. Of course, rates differ, and on some minor goods of a more breakable character, the increases will be proportionately more, though since the weight is comparatively small the additional cost should not be serious. It would appear from these figures that in normal circumstances the enhanced cost of building should not, therefore, be greater by more than 1 to 2 % as the result of the new railway rates; and we suggest that, in the interests of the public, the matter be carefully gone into and a tabular statement published in not too great detail, to which reference can readily be made. Such a statement could be used by the trade as evidence of justification for some increased charges, and by the public as a very valuable safeguard against any unfair dealings by profiteers. It will hardly be possible to produce any general schedule which will be sufficiently accurate to be applicable to the specific adjustment of work now in progress, but this is not the point. We want something whereby the trade and the public can obtain a fair conception of average increased cost, because we know that, in a matter of this kind which looms largely as one of general importance, it is very easy to inculcate an exaggerated idea of its magnitude in specific fields of industry.

We have no quarrel with the increase in railway rates, which is perfectly right and logical in principle. Railway stock is held by thousands of all classes in this country, and since the years before the Boer War things have been far from bright for these stock holders, who must be protected. To turn to other aspects of the matter, these increased rates will, of course, help to develop fresh means of transport; and though road traction is not so inviting for building materials as for some other goods, owing to the absence of suitable road surfaces and gradients in many places, some development in this direction may be expected, for it must not be forgotten that at the present cost of labour any handling saved is a very important factor. Where bricks are not put on rail at works, nor taken off rail on to the building site—the latter a rare occurrence—it may easily prove that a seemingly expensive outlay in motor haulage is really a considerable economy. It will be many years before we have a good series of motor roads able to attract a comprehensive tractor service with organised linked centres for local collections and distributions, though we think this will come, and we should like transport experts to express some opinion upon the practicability of the limited use of overhead conveyors in such districts as are badly served by railways and suitable tractor roads. There must be many districts in this country capable of producing building materials, given adequate means of transport to some suitable centre; and every such development would help to decrease the total transport required industrially, and thus assist the present situation. There is, however, another means of transport which has been much neglected and to which more attention should now be directed. We refer to inland water-ways. Years ago, our railways killed the canal system—in many cases, by actual intent; and the comparative slowness of this mode of transit, after railway development, made it unpopular. During the war, some efforts were made really to utilise our canals—and great quantities of munitions were transported from the Midlands by water. It is not generally necessary to transmit building materials at thirty or forty miles an hour; and if, as at present, they often have to wait a week or two for acceptance and perhaps a like time *en route*, there is nothing gained in the matter of speed. Barges are very capacious and the kinetic friction of water is very small. We should like to see our canals seriously taken in hand and supplied with motor-barges. This, of course, means a large capital outlay, in not only cleaning but strengthening banks and improving locks; but, with organisation, it should pay. What is wanted is a proper linking-up with other means of transport. The large railway centres should have branch goods connections to the canals, which, at these points, should be supplied with docks and modern mechanical handling arrangements, so that trans-shipment to rail or road might be expeditiously effected; and it seems to us that this development might quite usefully go on in sections, each section becoming available as completed, though naturally the full benefit would have to await the complete fruition of a broad general scheme. Present canal charges are, it is true, high, but might be very greatly reduced by mechanical improvements. Our interest in these matters is only an indirect one, but speed and economy in transport is of such general importance in connection with the building industry that we feel no hesitation in ventilating the matter.

NOTES.

The R.I.B.A. and the Institute of Scottish Architects.

AN important re-organisation of architectural societies in Scotland has just been completed. The independent societies which previously existed have united to form the Institute of Scottish Architects, with Chapters at Glasgow, Edinburgh, Dundee, Aberdeen and Inverness. The first President of the new body is Mr. William Kelly, A.R.S.A., of Aberdeen. The constitution and by-laws have been approved and the new body has been admitted as an allied society under the provisions of the Charter of the Royal Institute of British Architects.

The Press and the Arts.

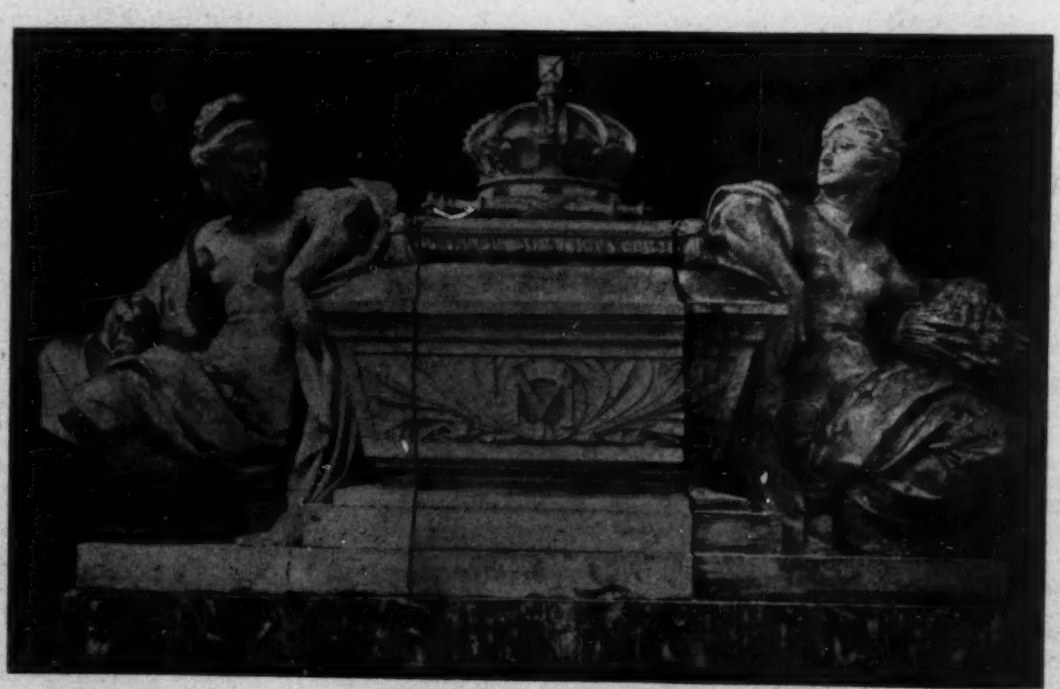
OUR correspondent, Mr. Gething, calls attention on another page to a long-standing grievance amongst artists, i.e. the lack of appreciation in the Press of the claims which architecture and the arts should have in the regard of the public. We do not know that his letter raises any new point, but it is well that the Press should be reminded from time to time that there is this lack of appreciation, and that to any artist worthy the name the fees he receives are only part of what is due to him. The question is whether the artist ought to seek more opportunities for showing what he has done. Artists who consider their work too high-class and precious to need advertisement may be partly in the wrong. Is there not something after all in Mr. John Burns's suggestion that the artist should be ready to come down from his pedestal occasionally?

Static and Dynamic Symmetry.

"ATROCIOUS painting, sculpture, or architecture could be created which would conform to all the rectangles found in Greek art." Thus does a writer in the *Times* preface his claim for fundamental inspiration in the artist. Further on he says: "The æsthetic philosopher can tell us precisely what art should be and why one type is better than another, and he usually does it with cleverness and much display of learning, but this does not help the artist." For the artist the proper realisation of static or dynamic symmetry may not greatly matter, but we are glad to see this letter signed "Jay Hammidge," which reminds us all that "a method of plan-making could not produce art any more than a knowledge of grammar could produce literature."

The French School in London.

THE announcement of the establishment of a hostel for French students and artists in London will be of interest to our readers, as it marks a development in the relations between the two countries. The establishment is similar to the Ecole de France at the Villa Medicis in Rome, and its purpose is to enable French students to acquaint themselves with the British Academies and Institutes, the collections of pictures, sculptures and objects of art in this country, with our architecture, science and literature, and to bring them into cordial relations with their British colleagues. According to the *Morning Post*, "Baron Edmond de Rothschild, himself a member of the Institute (Academie des Beaux Arts), is responsible for the project, and he sought the advice of Mr. John W. Simpson, President of the Royal Institute of British Architects, and the only British architect who has both been elected Membre Correspondant de l'Institut de France (Academie des Beaux Arts), and appointed by the Ministre des Beaux Arts Officier de l'Instruction Publique. Mr. Simpson at once placed his services at the disposal of his confrère gratuitously. Mr. Simpson



"Peace." Part of Pediment, New Parliament Buildings, Winnipeg.
The late ALBERT HODGE, Sculptor.

has been able to secure for the Maison de l'Institut à Londres No. 185, Queen's Gate, built by the late Norman Shaw, R.A., for the late Colonel W. Vivian; and under Mr. Simpson's direction the house is now being fitted and furnished. Baron Edmond de Rothschild has purchased the freehold from the Crown, has endowed the property with a sufficient sum for its due maintenance, and has presented the whole to l'Institut de France, so that the Maison de l'Institut de France now belongs to the French Government. Among the members of the Commission d'Administration are M. Ribot (Chairman), M. Cambon (Ambassadeur de France en Angleterre), M. Ch. Girault (architect), President de l'Academie des Beaux Arts, and the secretaires perpetuels of the five Academies, including M. Ch. Widor, the eminent composer, and the famous organist of Saint Sulpice. Lord Esher, Chairman of the Royal Commission of the Exhibition of 1851, representing the trustees of the site, has done all in his power to assist Baron Edmond de Rothschild in the fulfilment of his design. It is hoped that the work will be completed by next May, when the President of the French Republic will open the Maison de l'Institut à Londres."

The Middle Classes.

IT is beginning to be more fully realised that there is a very serious shortage of homes for the middle classes. By the middle classes we mean those who are removed from the two extremes of poverty and wealth. But we must not forget that there is a middle class in another sense, viz., those who, whilst being comparatively poor so far as money is concerned, are amongst the most intelligent and, let us add, the most law-abiding members of the community. Amongst these are many who are compelled to live on fixed incomes which are no longer adequate to the decencies of existence. What are these people to do for homes? They can no longer afford the kind of houses they have been accustomed to, but, whilst they are willing to bow to necessity and inhabit smaller places, where are they to find them? They can hardly afford anything better than the working-man's model cottage if it is to be let at an economic rent; are they, therefore, to try to get into these, with the result of taking away much of what has been provided for the hand-workers?

The Middle Class Houses.

ALREADY we are glad to note signs of an attempt on the part of private enterprise to meet this great need of better-class cottages for those who will be forced to live in houses very much smaller than they have been accustomed to. Only the other day we met with a case in which the intention to build a few cottages for labourers has been changed for a determination to try to do something for the housing of the poor middle class. We sometimes wonder how far the thoughts of statesmen carry in the desire to improve the lot of the poor but educated and well-balanced folk who are so vital a force in the general well-being of the country. There are thousands of British citizens whose work and thought do much to stabilise the best qualities of civilisation, but whose aspirations for wealth lead them no further than the right to live decently without being a burden upon others. For such people we should have the greatest respect and should endeavour to raise the working classes into a corresponding outlook on life. The insane desire to set money before ourselves and our children as the greatest good in life has much to answer for in the failure of civilisation.

A Suburban Example.

NOTWITHSTANDING all the difficulties, efforts are now being made by private enterprise to provide houses for the middle classes. Some houses were observed the other day in course of erection in Surrey from such a point of view. They were well built, by the ordinary methods of construction, and were for sale at a price which, considering the cost of labour and materials at present, was not excessive, although, naturally, it was greatly in advance of pre-war rates. The sitting-room accommodation was very good, but the bedroom accommodation was hardly sufficient; this is frequently the case now, owing to the roof space not being made use of, a wasteful omission which was referred to by Professor Beresford Pite recently at the Royal Institute of British Architects.

The Shortage of Railway Wagons.

THE concern felt by manufacturers and traders in regard to the delay and congestion caused on the railways by the holding up of wagons is shown by an advertisement which we publish this week. The advertisement is inserted by an advertiser who feels that the matter is of such urgency that it should be brought prominently before every industry. It has been shown that under existing conditions only during a very small percentage of the period of its life is a railway wagon engaged in actually transporting goods, and to use wagons as a warehouse is a very expensive method of storage. A great deal has recently been written regarding railway delays, but if all the time spent on these recriminations were devoted to devising means of speeding-up by the traders themselves, something might be accomplished towards tiding over the period which must elapse before sufficient new wagons can be built to replace the wastage which occurred during the war.

Part of Pediment, New Parliament Buildings, Winnipeg.
The late ALBERT HODGE, Sculptor.

Motor-Car Lights.

MANY years ago we drew attention to the danger that arose to all users of the roads from the dazzling head-lights used on motor cars. During the war this nuisance was put an end to, but it has now revived, and we are pleased to see it stated in the Press that the question will shortly be considered by a Committee appointed by the Minister of Transport. These lights are totally unnecessary, and are only used to enable excessive speeds in the dark to be attained by motorists. The brilliance of the lights confuses persons meeting the cars on the roads, and after the car has passed it leaves them blinded for some appreciable time. As the dazzling lights were dispensed with during the war, and for nearly five years motorists have used moderate lights with admirable results, it is to be hoped the use of dazzling lights will be made illegal. The danger is a growing one, as there will no doubt be a greatly extended use of motor-cars in the future.

GENERAL NEWS.

Professional Announcements.

Capt. H. W. Lockton, R.E. (T.), of the firm of Sheppard & Lockton, architects, Newark, has been demobilised, and re-started his practice at 24, Castle Gate, Newark-on-Trent, on Monday the 5th inst.

Mr. Cecil Massey, Lic.R.I.B.A., has re-started practice at Grecian Chambers, Devereux-street, W.C. 2.

The Surveyors' Institution.

The Institution proposes to hold examinations for the special diplomas in forestry, sanitary science, rating and surveying in June next, but an examination will not be held in a subject for which less than three candidates have signified by the end of January, 1920, their intention to enter.

Obituary.

The death is announced of Mr. George Cunnison, Burgh Surveyor of Blairgowrie. Mr. Cunnison had been Burgh Surveyor for twenty years and was recently appointed architect under the Blairgowrie housing scheme.

The death is also announced of Mr. James Thompson, M.S.A., of Alderley Edge.

The Sheringham "Daylight."

The invention of Mr. George Sheringham, for increasing the visibility of colours under artificial light, which was publicly demonstrated for the first time in a picture exhibition on December 20, will be shown in future at dusk every afternoon at the Leicester Galleries.

A Dante Fresco.

It is reported that a fresco has been discovered in the Church of San Francesco, Ravenna, Italy, which is supposed to be a portrait of Dante. The position of the arms and hands is identical with that of the bas-relief on Dante's tomb, executed by Marco Lombardo.

The Devonshire House Site.

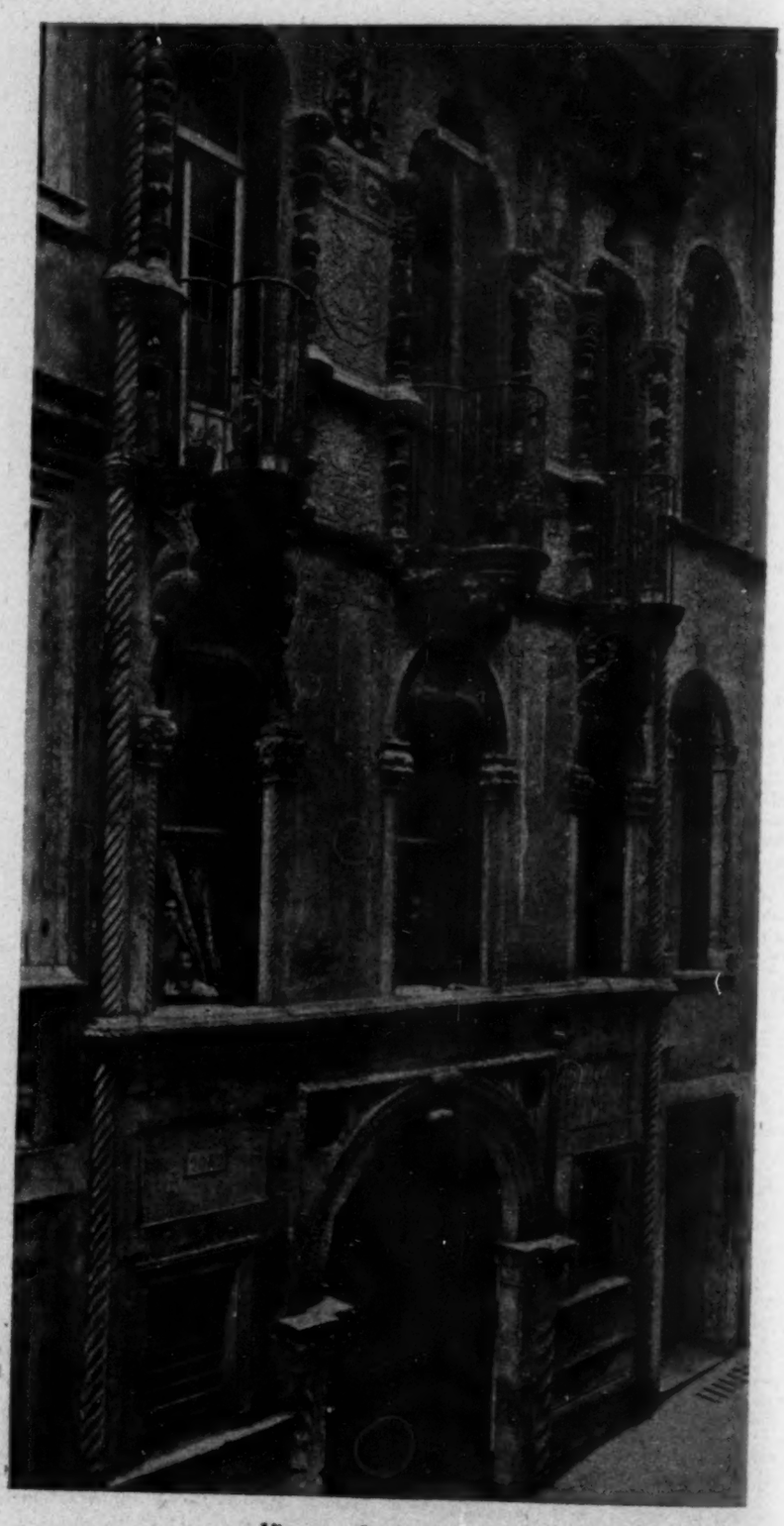
In an interview with a Press representative last week, Mr. Bowman, of New York, who is negotiating for the purchase of the Devonshire House site, Piccadilly, stated that the negotiations had reached a stage which justified him in believing that he would be successful in attaining his object. If the site were acquired by his syndicate, the building would be built to plans prepared by the syndicate's American architect. It was not intended to build anything in the nature of a "sky-scraper." He hoped the hotel would be completed and open to the public within eighteen months of the signing of the contract.

Victoria and Albert Museum.

The Victoria and Albert Museum has lately received a bequest of eighteenth-century porcelain. The bequest consists of a hundred pieces, the greater part of which were made at the Royal Saxon Factory at Moissen. The majority are figures and groups, modelled between 1740 and 1765 by Johann Joachim Kaendler and his pupils. Primarily a sculptor, it is to Kaendler that we owe the original idea of depicting in porcelain the everyday life of his time, while the modelling of articles for table purposes was revolutionised by his vigorous use of relief. The Museum has lately received on loan a series of earthenware figures, excavated in 1918 from a Chinese tomb of the T'ang Dynasty (A.D. 618–906). It is understood that the present series was found in an Imperial tomb, and the exceptional size of the figures lends probability to the statement.

Miners and Housing.

In the course of a paper read before the Institution of Municipal and County Engineers, Mr. A. S. V. Taylor, A.M.Inst.C.E., said: "In the planning of the house the conditions of employment must be the guiding factor, as the house must meet the reasonable needs of the class which it is proposed to accommodate. During the consideration of this question by a local authority in a South Wales district recently, the miners' representatives insisted on the provision of a parlour in every case, together with living-room, working scullery, bath-room, and generally three bedrooms—four bedrooms to be provided in a small proportion of the houses to be erected. They also insisted that the coal-house and w.c. should be outside the main building, but approached under cover. Baths, of course, had to be provided, and the bathing arrangements required very careful consideration. A plentiful supply of hot water was essential; the method sometimes adopted of providing hot water by means of the copper was not satisfactory, for, in addition to the necessity for hot water for bathing and cleaning, some means were required for the drying of clothes."



Vicenza: Palais Pigafetta.

ARCHITECTURE OF ITALIAN CITIES IN THE WAR ZONE.

VICENZA AND ITS PALACES.

BY PROFESSOR ALFREDO MELANI.

VENETIA, the region which was most exposed to the damages of the Italian war, lies in the North of Italy, between the mountains and the sea. Art has plentifully decorated this region, which, under the old Republic of Venetia, enjoyed a monumental splendour which has been justly called superb. Venice, the capital city, possessed the most beautiful samples of architecture, sculpture, paintings and decorative art. In the cities of Venetia, art has its own characteristics, although harmonising with the style of Venetian monuments.

If I were writing about paintings, I should have to show the excellency of a School at Vicenza and at Verona (independent of the Venetian school, which had its artists—and what artists!) from Bartolomeo Montagna (Vicenza) to Paolo Veronese (Verona), with masters such as Marcello Fogolino, Giovanni Bonconsiglio, Francesco Bonsignori, Gio. Maria Falconetto, and Liberale da Verona. But I am studying architecture and architectural decoration, and Vicenza brings me back to its Palaces, which are more numerous and significant than its churches. Indeed, the churches of Vicenza do not impress one as do its Palaces, of which one cannot think without calling to mind a famous architect—Andrea Palladio (1508-1580). Yet in thinking of the Palaces built by Palladio at Vicenza, one considers the municipal buildings, some of the oldest in Venetia, which possess a patrimony in monuments older than those left by Palladio. But this eminent citizen of the city at the foot of Mounts Berici still imposes his presence on Vicenza. What city in Italy had architects of such fame? Just let us name Vincenzo Scamozzi (1566-1616); he erected artistic buildings in his native town, and received the highest praise. The *Quattro Libri di Architettura*, of the Scamozzi, published in Venice in 1570, says: "Many gentlemen came to Vicenza to study architecture, and they are not unworthy to be classed amongst the most famous," and we find the names of Giangiorgio Trissino (Palladio's Mecænas, and famous scholar), the Counts Marcantonio and Adriano Thiene, M. Antenore Paiello, knight, Fabio Monza, &c. They were "gentlemen" living at a time near enough to the "Palladiana età," and, perhaps, they were not real architects, but students, such as Trissino, who took pride in the fact that he knew the "rules" of classical architecture without being a builder himself. However, there were some architects, Palladio's predecessors, who had embellished Vicenza with Gothic palaces whose number and beauty should be better known than they are.

One could easily compare the old indifference to the contemporary indifference. Contemporary architects, dazzled by the glory of the Renaissance and the greatness of Palladio, content themselves with admiring with devoted complacency the "Palladiani" buildings, as if the Gothic Palaces were non-existent.

The Palaces, Gothic, Renaissance and "Palladiani," are the most admired buildings in the city of the Mounts Berici, but the connoisseurs remember with pleasure San Lorenzo and Santa Corona. The Cathedral, a Gothic church, is the most destitute and empty that I know of; San Lorenzo is a model of the Gothic art, with a front rich in sculptures; Santa Corona, on a plan similar to San Lorenzo, is an older building.

San Lorenzo has been extensively restored in late years, and, unhappily, the bad state of preservation of that building reminds us that all the monumental buildings in Vicenza are in need of consolidation work. There is, perhaps, no other city to compare with Vicenza for the bad state of preservation of its monuments; and, if actual conditions add to the picturesque aspect of the city and to the symmetry of the buildings, it is certain that it does not add to the peace of mind of the magistrates of the Venetian city, who supervise also all fragments and old houses, which are not considered at all by hurrying tourists.

Gothic or not, the Palaces of Vicenza, as a rule, have only the original fronts left; the plans and interiors have been modified a hundred times. What happened in Venice also happened in Vicenza. The Grande Canal is scenery in stone and marble, and behind the sculptured stone faces are hidden rooms and halls altogether out of harmony with the columns and arches. This is vexatious to every artist who would like to find, be it in Venice or in Vicenza, the artistic sense of the exterior in the interior of the buildings.

Gothic Palaces.

Vicenza again reminds us of Venice; thus, the Ca' d'Oro and the Palace Foscari, the Palace Contarini-Fasan and the Palace Giustiniani, on the Grande Canal, divide the secret of grace with the Palaces of Vicenza, Pigafetta, Schio or Ca' d'Oro, Regau, Caola (formerly Garzadori), Sessi Porto, Navarotto, Bertolini (formerly Porto), Colleoni, and lesser monuments that here and there we find interesting, mostly through some details.

An ideal line brings together these fifteenth-century buildings, erected before Palladio, and that line on the road to Venice gives our palaces their character. There are exceptions, as, for instance, at the Palace Bertolini, (formerly Porto) and Palace Caola (formerly Garzadori), where the pointed arches of the windows do not meet the semi-circular door on the front; for the Gothic of our Palaces inclines towards the Renaissance, and the door is never as pointed as the windows, although it is also finely sculptured. As a rule, the sculptor's work at the windows and doors is marvellous, and the capitals, friezes and consoles are ornamented with flowers and plants, in perfect taste. The vegetation creeps up and reaches the arches with their graceful concave-convex sweep, and stretches forth and decorates the consoles. The palaces have very often two stories, the ground floor having rectangular windows. Notice the contrast between the buildings of a newer period, with their porticos, and the Gothic palaces unprovided with that useful and æsthetical element. One exception is at the Palace Braschi.

It is deplorable that the painted walls which adorned the fronts of the palaces of Vicenza, as was the almost general custom in Venice, do not, nowadays, glitter with their coloration; they are not always scenes with figures, as is often the case at Verona, but paintings resembling tapestries, with conventional, geometrical flower motives, as can be seen on the Palaces Regau, Caola (formerly Garzadori), Navarotto and, near Vicenza, at Padua.

Stone plays an elegant part around the paintings on the Palaces' fronts. There are some small medallions above the windows, which give them a new artistic interest; and there are some fascia, looking like lace-work, and a typical Venetian ornament, distinct and accentuated. As in Venice, one finds in Vicenza incrustations, small compositions in discs of many colours, painted in their pictures by Carpaccio and Bellini.

The most charming and characteristic Palace of Vicenza is without doubt the Palace Pigafetta, erected in the Via de la Luna, a short and poor alley, narrow and dark, near the famous Basilica of Palladio, which is in the centre. In 1481, the Palace, built in 1460, was modified. What gives it its originality are the sconce columns on the sides of the windows, the only ones of that style in Vicenza, and Venice itself cannot boast anything of that kind. The Palace Pigafetta is, therefore, a model by itself, and nobody can miss that difference between it and the other palaces of Vicenza of the same style.

Palaces of the Renaissance.

A number of palaces, gracious and light, and built before Palladio's time, detain us still in Venice. The Bishop's Lodge (Loggia del Vescovo) is one of them. It is the work of an architect of Vicenza, Tommaso Formenton (1492), though the honour of its erection goes to Bernardino da Milano a hardly-known artist of Lombardy, a centre of architecture and arts, whose sons went to Venice. A monument of the transition, it is rich in sculptured ornaments in the best Venetian style of the fifteenth century, with knob arabesques, vases, griffins, harpies, tables, and children.

The connection between the Palaces of Venice and the Palaces of Vicenza is best shown by the Palace Bertolini (formerly Porto), the Palace Negri, the Palace Thiene (now the Popular Bank), and the Palace Conti. These palaces have relinquished the pointed arch for the semi-circular. The semi-circular windows are without crownings but for small rose-diamonds, which are a characteristic of the times, horizontal entablature, thin supports, and Roman details. Vicenza has no buildings able to bear comparison with the best Gothic models, and both styles are met within its doors.

Palaces of Palladio, and "Palladiani."

Of Andrea Palladio, the architect, it may be said that praise has been niggardly given, to the detriment, I think of his real virtues. It is a fact that no architect has ever been admired as much as the architect of Vicenza. "Il gran Vitruvio nostro," exclaims an enthusiastic writer. In the last years of the sixteenth century, Palladio fervently studied Rome and her monuments with Bramante and Raffaello, in order to accomplish an affected reproduction of which Vicenza, in particular, bears witness. Here the Olympian Theatre is the deepest symbol of that tendency. More than Bramante, if such a thing were possible, Palladio forsook decoration and looked for effect in the whole, and in proportions according to the classical taste. Rhythmical and symmetrical compositions, they were approved by the style of the Pantheon and the Thermes which still existed in Palladio's time. He also removed the ornamental resplendency of Imperial Rome, either because he feared to darken the earnestness of his compositions, or because he thought to get nearer the austere antiquity.

Most of Palladio's cornices are plain, and the mouldings limited to the strictest necessity. In my opinion, Palladio has facilitated the reaction brought about by Michelangelo, that is, independency and sculptural resplendency in an effect of picturesque architecture. In one word: *the Baroque*.

Palladio's affectation is particularly shown in the front of the Palace Valmarana. In the inter-columniation the architect has inserted three stories of windows, giving the propped pilasters an excessive importance to the decorative motive, neglecting the fundamental function of a pilaster-propping, here doomed to a pleonastic use. Architects under the guidance of Palladio, even in a modest way, erected in Vicenza and her neighbourhood a number of buildings which give to the landscape of Vicenza a particular stamp; a landscape of white columns and porticos showing on the green and on the skies, and on the sunny mountains.

The "Palladiani" buildings are all alike, and help to give to the city and to the country a physiognomy which would be monotonous if the sight of common houses did not correct it.

Two buildings whose greatness in their simplicity is wonderful, are Palace Loschi (now Zileri—Dal Verme) and Palace Franceschini (now Folco). These are very representative, and more or less show Palladio's influence in Vicenza. This city is, thanks to her favourite architect, a typical Italian city.

CORRESPONDENCE.

The Press and the Arts.

SIR,—I was interested and greatly pleased to read your strong comment on the lack of appreciation in the Press of the claims which architecture and all the arts should have on the regard of the public. This has been going on for a long time, and all that the general Press thinks is of interest is what some old Master has realised. When shall we hear the last of these three pictures which cost nearly two millions?

Only a week or so since I issued my humble protest against this lack of appreciation. Beautiful works in architecture and its allied arts are being daily unfolded to us, and all you read is the cost and who were present. In the dedication of many beautiful stained-glass windows by artists worthy to rank with men of the past, no name is given, because they do not publish names without a fee. The artist's name is of more interest to many than what "the glory-crowned, squint-eyed Byzantines cost," as the late J. Orrocks pointedly put it. The Civic Arts Association has much to do. Let the Press use its great aid in forwarding the production and encouragement of all that is beautiful in our modern work.

T. T. GETHING.

Chilmark, Salisbury.

London and the Picturesque.

SIR,—The reproduction of Sir Ernest George's delightful water-colour drawing of Wych-street—now, unfortunately, merely a memory of the past—follows very happily after the report of Mr. Sydney Perk's paper, read before the R.I.B.A., on "London Town-planning Schemes in 1666."

Most of us have been brought up in the belief that Sir Christopher Wren's plan for the re-building of London after the fire was a paragon of perfection. Of late years many have been thinking that its merits had been possibly over-rated, and a few at various times had somewhat timidly passed some criticisms upon it. Mr. Sydney Perks, I have reason to believe, in his criticisms openly expressed what many have been thinking; he fittingly sums up his criticisms in the sentence: "If Wren's scheme had been carried out, what an uninteresting place the City of London would be to-day."

The picturesque had no place in Wren's plan. Stateliness and grandeur are fine qualities, but if they are carried to excess and the picturesque entirely eliminated, the result is tame, rather alien to English character and tradition and lacking in human interest.

Aldwych and Kingsway seemed to be designed for the motorist to rush along at full speed; there is not much for the pedestrian to lovingly linger over. The buildings aim at a palatial, but some only achieve a bureaucratic, effect. Cannot modern improvements be made and buildings be had with some amount of picturesque character? You answer this as regards buildings in your current number. The Offices for the Crown Agents for the Colonies have this qualification without losing their public character. Moreover, they have plenty of window area; alas! several public buildings in the neighbourhood are sadly lacking in this necessary quality—buildings modelled on late and heavy types of Renaissance, a style which is not in any way so suitable for modern requirements as the earlier types.

Mr. Perks has done good work in his criticisms of Wren's plan, and many lessons may be learned from them, particularly useful just now when town-planning is so much in the air.

W. J. H. LEVERTON.

Quantities in the London Area.

SIR,—I thank both Mr. Taylor and Mr. Nicholson for their letters in your issue of January 2. As to Mr. Taylor's reply, I agree that all builders in the present emergency and under existing circumstances might be invited to erect houses, but I maintain that the real builders who build expeditiously are the builders who were engaged upon this class of work previous to the war; and if every one of them were given a reasonable opportunity of tendering in the manner in which they have been accustomed to, there would be very little (if any) need to call in builders unaccustomed to house-building. I feel certain it is this latter class of builder who has partially sent up the cost of erection, because they price their work as suitable for more permanent structures than a small dwelling-house calls for. Surely the builder who is an expert at this particular class of work, and who thereby is enabled to quote a fair and reasonable price without quantities, should not be put in the category of a gambler. If so, the same might be applied to a medical or other specialist who can diagnose a disease without reference to a medical treatise on the subject.

The cases where quantities were adopted for the erection of houses previous to the war were very few and far between, and the case Mr. Taylor mentions is, I think, the only one I know of. I have never used them for house-building, as mentioned in my previous note, and as for adopting quantities where direct labour is employed, it appears to be a very great luxury.

As to Mr. Nicholson's reply, I agree that a very large number of builders of cottages build them on their own account; but I would point out that a very large number in and around London have also been built, true, as a speculation, but under contract, where the builder has had no interest whatever except the building thereof. I think the least said about the London County Council housing schemes before the war the better. If the drawings and specifications, as I have previously stated, are prepared by an architect who is accustomed to this class of work, both parties know precisely what is included; and in my experience, which has not been inconsiderable in this class of work, I have found the plans and specifications, &c., leave no loopholes whatever and no variations are required.

ERNEST A. TYLER,

Gosport. *Housing Director.*

[This correspondence must now cease.—ED.]

The Institute, The Society of Architects, and the Bridgwater Housing Competition.

SIR,—There are two questions in connection with the above which I suggest call for definite answers:—

(1) Why these two bodies, presumably representative of the profession, could not have made their discoveries before a sufficient time had elapsed for the drawings to be completed?

(2) Why, at the time of the formation of the Ministry, such supposedly representative bodies did not influence legislation to the extent of prohibiting the present scandal which permits of architects of slender means "shadowing" Borough Surveyors as nominal "assistants" at the offensive salary of £300 per annum, or less? The nominal assistant designing lay-outs and drawing house plans, whilst the surveyor draws the fees!

Surely such "representative" bodies should have secured for the architect a share in the proceeds of his work, at least equal to that of the surveyor.

H. BRYANT NEWBOLD.

Mr. Westacott's Housing Scheme.

SIR,—Your correspondent Mr. Percival C. Blow evidently took my reference to the "jerry builder" as an attempt on my part to justify the old system of cramped and badly-built houses. Allow me to remove this impression from readers of your valuable paper.

My firm has been engaged in the development of building estates for twenty-five years, and I speak with knowledge of the subject. My remark at the Cannon-street Hotel was "that the 'jerry' builder was the product of a 'jerry' community, who in the past accepted anything provided it was cheap."

The fact that prior to 1914 houses of this class were sold for less than 5d. per foot cube, and that builders who attempted to raise the standard and produced the better article at a higher price were hopelessly left by their competitors, is, I think, justification for my remark. Builders as a class will welcome a higher standard of work, provided surveyors and those responsible for finding the money will educate the public to pay for it.

As the cost of building to-day is in the region of 1s 8d. per foot cube, it is obvious the public will appreciate some of the past efforts of "jerry."

H. R. SELLEY.

WE have received from Mr. A. G. Westacott a copy of a letter which he has sent to Mr. Percival C. Blow in reply to the letter published in our issue of December 26. After referring to Mr. Blow's criticisms of the conference held to discuss the Westacott alternative proposals for financing the housing schemes, Mr. Westacott states that the speakers at the meeting were not desirous of the reinstatement of the "jerry" builder, and that most of them endorsed the view that better-class houses should be provided than in the past. In regard to Mr. Selley's remark that the "jerry" builder was the product of a "jerry" community, Mr. Westacott points out that in the past working-class houses had to be supplied to let at economic rents within the means of the prospective occupants. The position is on all-fours with the case of a shopkeeper whose customers are only prepared to purchase the cheapest and most inferior articles, and who either will not or cannot afford to pay for better-class goods. Is the shopkeeper to blame if, in order to obtain his livelihood, he caters for that demand?

Mr. Westacott agrees that it is necessary to raise the standard of working-class houses, and this is provided for in the alternative proposals, where it is laid down that certain standards as to maximum cost, minimum accommodation, site, materials, design, internal fittings, &c., would be enforced by the housing authority, which automatically should ensure that houses erected would be up to present-day standards. The alternative proposals are intended to give full scope to the activities of architects, as against the limited sphere which would be afforded to them under the present proposals of the Government.

Zeebrugge War Memorial: An impression.

[We have received the above sketch from Mr. Stanley P. Scase, who states that it is the impression he received during a visit to the Zeebrugge Memorial Exhibition recently held at the Royal Institute of British Architects.]

A GENERAL (Business) Meeting of the Royal Institute of British Architects was held at 9, Conduit-street, W. 1, on January 5, Mr. E. Guy Dawber in the chair.

Obituary.

The Hon. Secretary announced the death of Mr. Edward William Hudson (Associate, 1889). Mr. Hudson was in his 76th year, and was for some years a member of the Literature Standing Committee. Until a few years ago he was a regular attendant and a frequent speaker at the meetings of the Institute. His son, Mr. S. G. Hudson, practising in South Africa, is a Fellow of the Institute. A motion that an expression of regret be entered in the Minutes, and that a message of condolence be conveyed to his family, was passed.

The decease of Mr. George Richards Julian, who was an Associate of the Institute from 1878 to 1915, was also announced.

Election of Members.

The following members of the Institute were elected as Fellows :—

O. Maxwell Ayrton (*A.*).
Q. M. Bluhm (*A.*), Preston.
W. H. Bourne (*A.*), Saskatoon.
C. G. Boutcher (*A.*), Kedah.
N. G. Bridgman (*A.*), Paignton.
A. H. Brownrigg (*A.*).
H. J. Chetwood (*A.*).
H. G. Gamble (*A.*), Lincoln.
T. F. W. Grant (*A.*).
W. C. Le Maitre (*A.*).
E. B. Maufe (*A.*).
L. T. Moore (*A.*).
R. G. Muir (*A.*).
B. Oliver (*A.*).
S. C. Ramsey (*A.*).
W. W. Scott-Moncrieff (*A.*).
A. Smithers (*A.*).
H. S. W. Stone (*A.*), Taunton.
C. H. Strange (*A.*), Tunbridge Wells.
E. J. Tench (*A.*), Norwich.
C. B. Willcocks (*A.*), Reading.
F. R. G. Wills (*A.*).

And the following Licentiates who have passed the qualifying examination :—

A. J. Driver.
V. J. Esch, Calcutta.
E. B. Kirby, O.B.E., Liverpool.
H. T. Sandy, Stafford.
S. Wilkinson, Calcutta.

The next meeting of the Institute will take place on January 19, when the award of Prizes and Studentships will be announced.

The Final Examination.

The following particulars are given regarding the R.I.B.A. Final Examination :—

Instructions to Candidates.—The drawings should preferably be on uniform sheets of paper of not less than Imperial size. Drawings for subjects (*a*) are to have the shadows projected at an angle of 45 degs. in line, monochrome, or colour. Drawings in subjects (*b*) are to be finished as working drawings.

Subject XLIX.—(*a*) An Elliptical Grand Staircase and Vestibule in a Gentleman's House.—The candidate is to indicate the rooms adjoining the staircase. Drawings.—½-inch scale : One plan and two sections. (*b*) A Factory on an Island Site Outside the London Area.—Building to be 100 ft. square and have six floors, the top floor to carry machinery (4 cwt. per square foot). The whole to be fireproof. Drawings.—½-inch scale : Plan, elevation and sections, ½-inch sectional detail.

Subject L.—(*a*) A Town Church to Seat 800 Persons.—Material, ferro-concrete. Corner site. Drawings.—¼-inch scale : Plan, section and two elevations. ½-inch detail. (*b*) A Dairy Farm for 100 Cows, with Bailiff's House.—Drawings.—¼-inch scale : Plan, sections and two elevations.

Subject LI.—(*a*) A Memorial "Open Access" Library on Corner Site.—70 ft. square. Rooms : Newspaper, reading, magazine, reference library. Small museum, small lecture-room. Stockroom in basement. Drawings.—¼-inch scale : Plans, elevations and two sections. ½-inch detail. (*b*) A Permanent Canteen for a Works, with Simultaneous Seating Accommodation for 600 Men and 600 Women. No waiting. Rooms : Rest and smoking-rooms. Kitchen and all necessary offices. Lavatory accommodation for kitchen staff. Manager's office. Drawings.—¼-inch scale : Plans, sections and elevations.

Candidates in the United Kingdom must submit their designs to the Secretary of the Board of Architectural Education, 9, Conduit-street, W. 1, before the following dates : Subject XLIX, February 28 ; Subject L, April 30 ; Subject LI, June 30. Additional time is allowed for candidates abroad.

ARCHITECTURAL SOCIETIES.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

Continuation Schools.

THE fifth general meeting of the Session was held at the Association's Rooms, Royal Society of Artists' Buildings, New-street, Birmingham, on January 2, the President, Mr. H. T. Buckland, F.R.I.B.A., in the chair.

The meeting took the form of discussion on "Continuation Schools," the principal speaker being Dr. Innes, Chief Education Officer of Birmingham, who pointed out how essential it was that the necessity for the advancement of educational facilities in this country should be realised. In Birmingham 15 sites had been provisionally selected for continuation schools, and as far as was possible and practicable they had been chosen near centres of communication. The schools were to be planned on entirely new lines, and one of the largest questions affecting their planning would be that of curriculum. They desired to make the curriculum elastic, and this must influence the architect to a very large extent in his design. It was proposed to construct the schools in such a manner that the subjects most called for in any particular district could be taught in them, and these subjects would probably change as time went on. It had been found, especially in Birmingham, that the requirements for advanced education varied according to the growth of a district ; therefore, it was desirable that the schools should be designed in such a manner as to permit of their being used, and used without inconvenience or discomfort, for entirely different subjects to those which were originally taught in them.

The training for the first seven years, when the students ages would range from 14 to 16, would be on very general lines, and a great deal of attention would be paid to development of character and manual training, literary work occupying a subordinate position. It had been suggested, owing to the high cost of building, that the gymnasium should be constructed in such a manner and of such a size as to serve also as a central hall, provision being made in the design for the addition of a central hall at a later date. It was proposed to provide dressing rooms, and possibly shower baths, in a position convenient to the gymnasium, also a club room and a kitchen. The library would play an important part, connecting as it would the academic and social sides of the school. To retain efficient staffs; proper accommodation must be provided for them, and it was proposed to improve upon the inadequate accommodation that existed in most of our schools to-day.

The cost of building was high, and houses, it was felt, should at this time be the primary consideration. Education must not be overlooked as in the past ; it was a vital factor to the existence of the population of the future, and what was spent now in the erection of these much-needed institutions, the country would benefit by in the years to come.

Other speakers included Mr. E. C. Bewlay F.R.I.B.A., Mr. J. A. Harper, Mr. A. Harrison, F.R.I.B.A., Mr. E. Wood, and Mr. A. L. Snow, A.R.I.B.A. A hearty vote of thanks was accorded to Dr. Innes.

NOTTINGHAM AND DERBY ARCHITECTURAL SOCIETY.

The Wingfield Manor House.

At a recent meeting of the Society, Mr. Watkins, President, in the chair, a letter was read from the Town Clerk of Nottingham, that the School of Art Committee regretted that it was not possible to accede to the Society's suggestion that a representative of the Society should be co-opted on the Committee. Two Associates were elected, and after other business Mr. P. H. Currey, F.R.I.B.A., Derby, delivered a lantern lecture on "The Manor House at Wingfield," to which ladies and friends had been invited.

Mr. Currey pointed out that the special interest of Wingfield consisted in its being an example of a fully-developed type of English country house, all built at one time. The remains of a neighbouring mound indicated probable early occupation of the site, which was adapted for easy defence. The Manor was held at Domesday by Robert, under Wm. Peveril, and afterwards conveyed to Robert de Paveley. The lecturer described how the house was built around two courtyards, and was a natural development from the Saxon hall with bank and stockade. The outer court comprised the great barn and farm buildings. Features of the Manor were the beautiful masonry, the entrance to the inner court and the numerous chimneys. The porch and oriel of the Great Hall, the centre of life in a mediæval house, were fine examples of fifteenth century work at its best. The drawing-room had often been called the Chapel, but in Mr. Currey's opinion this was an error due to the large traceried window. Attention was called to the beautiful treatment of the vaulted roof and carved bosses of the undercroft. After the Restoration the Manor passed to the family of Halton, the present owners. It was then partially restored, the Hall divided into two stories and several rooms and square-headed windows inserted.

An Example of Indian Carving.

Leading Contents.

	PAGE
RAILWAY RATES AND BUILDING	49
NOTES	50
GENERAL NEWS	52
ARCHITECTURE OF ITALIAN CITIES IN THE WAR ZONE	53
CORRESPONDENCE	54
R.I.B.A.	55
IMPROVEMENTS IN STAINED GLASS	60
CONCRETE COTTAGES	62
BUILDING MATERIALS COMPETITIONS AND EXHIBITION	62
RETAINING WALLS	63
CONVENIENT HOUSING.—II	64
HOUSING AND TOWN PLANNING NOTES	65
THE CONCRETE INSTITUTE	66
THE BUILDING TRADE	67
NEW INVENTIONS	69

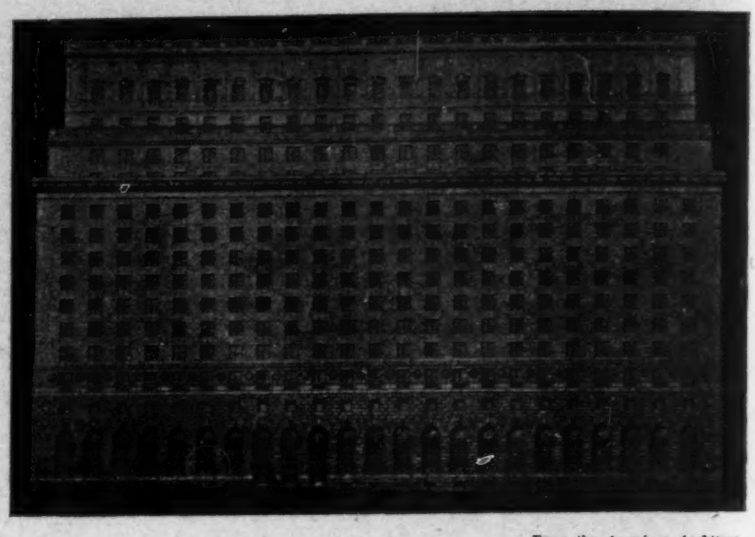
ILLUSTRATIONS.

New Offices for the Crown Agents for the Colonies.

In our last issue we gave a view of the new offices of the Crown Agents for the Colonies which have been erected at Millbank, the architects of which are Messrs. J. W. Simpson & Maxwell Ayrton, and we now publish plans and a detail elevation of the western annexe in Wood-street which will soon be commenced.

The principal entrance is fitted with mahogany doors with bronze handles, and over the entablature to the doorway are the Royal Arms surmounted by a crown, while seated on pedestals on either side are symbolic figures by the late Albert Hodge. The elevations consist of a plain base and horizontal rustication up to the first floor level, which is marked by balconies supported on small consoles. From the first to the third floor levels are broad pilasters, terminating in abutment-like features decorated with lions' heads. Above these are decorative stone urns, between which and partly concealing the slate-covered mansard roof runs a balustrade.

Internally, the main feature is the staircase, constructed of Corsham Down stone on reinforced concrete, which runs throughout the height of the building and terminates under the tower. The coved ceiling is modelled in stuc, containing the badges and emblems of the Crown Colonies, and the various cornices, soffits to stairs, panels, &c., were carried out in the same material. The Crown Agents' rooms are situated on the first floor. The wall panels of these rooms are coloured creamy-grey, lined with a darker tone, and there are white marble chimney-pieces with an inner surround of black marble, but the rooms differ from one another in architectural treatment in several respects.



From the *American Architect.*

Federal Reserve Bank Building, New York.
Design by Mr. CASS GILBERT, Architect.

Thirteen "New System" inter-communicating telephones are installed in the building.

The building is constructed generally of brick and stone—Whitbed and Portland for the exterior and Corsham Down for the interior. The floors and flat mansard roofs are fire-resisting, and constructed on the hollow-brick system. The kitchen and a canteen are situated on the top floor. The cost of the building worked out at 1s. 2d. per foot cube, inclusive of heating and electric lighting mains, but exclusive of furnishing and special fittings.

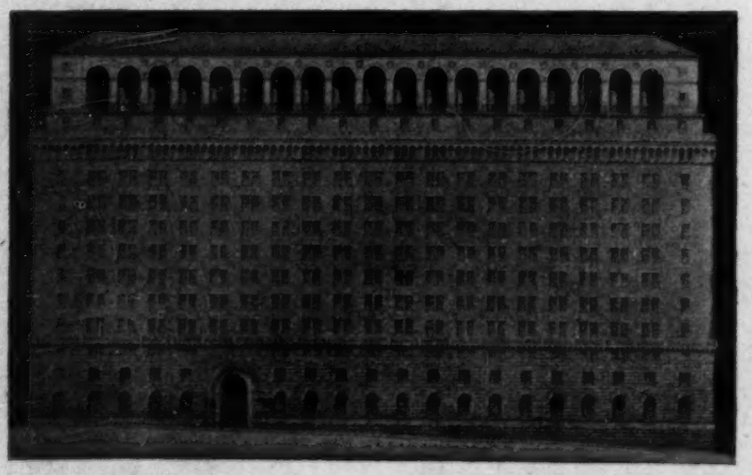
Messrs. Holliday & Greenwood, Ltd., were the general contractors for the building.

Vicenza.

These illustrations are given in connection with the article on page 53.

An Irish Memorial.

A committee has been formed to establish a memorial to the officers and men of Irish regiments who fell in the war, to take the form of a chapel in Westminster Cathedral. It is proposed that each regiment shall have its own marble tablet and "Liber Vitæ" containing the names of the fallen. The scheme is estimated to cost £10,000, and the treasurer of the fund is Lady Sykes, Mansion House, E.C.



From the *American Architect.*

Competition for Federal Reserve Bank Building, New York.
Premiated design, by Messrs. YORK & SAWYER, Architects.

MEETINGS.

FRIDAY, *January* 9.

Auctioneers' and Estate Agents' Institute.—Mr. Frank W. Hunt on "Some Aspects of the Housing Problem." At 34, Russell-square, W.C. 7.45 p.m.

London Society.—Mr. Raymond Unwin, F.R.I.B.A., on "A Few Thoughts on the Development of London." At the Royal Society of Arts, John-street, Adelphi. 4.30 p.m.

MONDAY, *January* 12.

Clerks' of Works Association.—Discussion on Westminster Hall Roof. At Carpenters' Hall, E.C. 7.45 p.m.

Surveyors' Institution.—Messrs. E. M. Konstam, K.C., O.B.E., and C. H. J. Clayton, M.B.E., on "Land Drainage from the Administrative and Engineering Points of View." At 12, Great George-street, S.W. 1.

TUESDAY, *January* 13.

Institute of British Decorators.—Mr. A. C. Bawtree on "Colour." At Painters' Hall, E.C. 4. 7.30 p.m.

Institution of Civil Engineers.—Messrs. J. Mitchell, R. F. Hindmarsh, J. W. Sandeman and W. Simpson on "Harbours." At Great George-street, S.W. 1. 5.30 p.m.

THURSDAY, *January* 15.

L.C.C. School of Arts and Crafts.—Sir Banister Fletcher, F.R.I.B.A., on "Belgian and Dutch Renaissance." At Southampton-row. 6 p.m.

COMPETITION NEWS.

Southport.

FOR THE EDUCATION COMMITTEE.—Designs for a secondary school. The sending-in day has been extended to February 7.

Ilfracombe.

FOR THE URBAN DISTRICT COUNCIL.—Designs for a concert hall. Sending-in day, January 15. Mr. H. G. Brede, Solicitor and Clerk to the Council, Town Hall, Ilfracombe.

Chatham.

FOR THE BOROUGH COUNCIL.—Plans for the lay-out of about fifty acres, for the erection of working-class dwellings. Premium, £100. Sending-in day, February 9. Further particulars from Mr. Edward B. Lee, Town Clerk, Chatham. (See our advertisement pages to-day.)

Export Credits Scheme.

The Board of Trade announces that Roumania has been added to the list of countries to which the above scheme applies.

R.A. EXHIBITION, 1919.

ENTRANCE TO FRONT ELEVATION OF HOUSE AT WIMBLEDON.

MESSRS. W. & E. HUNT, Architects.

[This illustration is from a photograph exhibited in the Royal Academy, 1919. The walls are of hand-made, dark-red bricks, roofs of hand-made, dark-red tiles, and a simple treatment of casement fenestration.]

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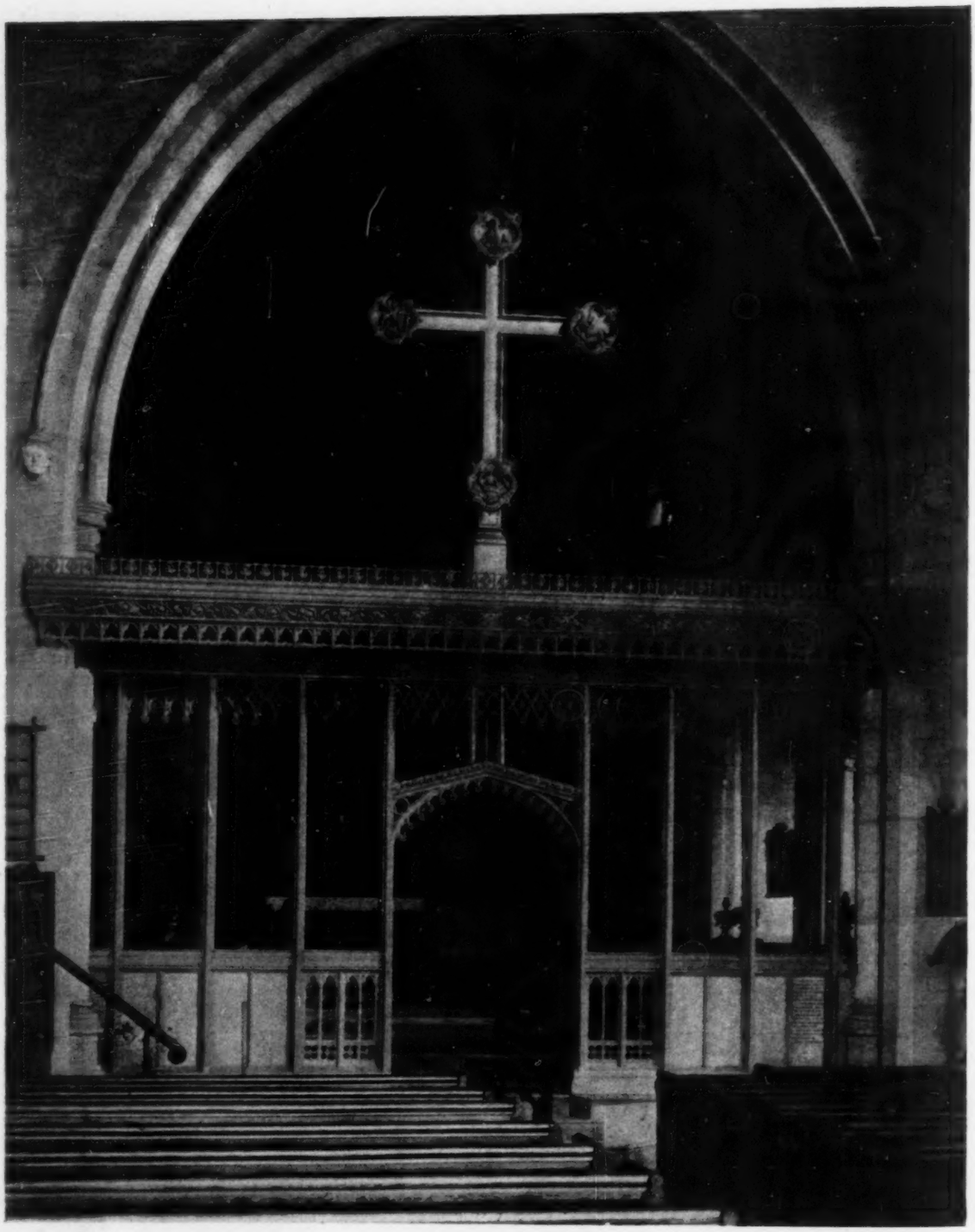


R.A. EXHIBITION, 1919.

NEW CHANCEL SCREEN, ST. GABRIEL'S CHURCH, SWANSEA.

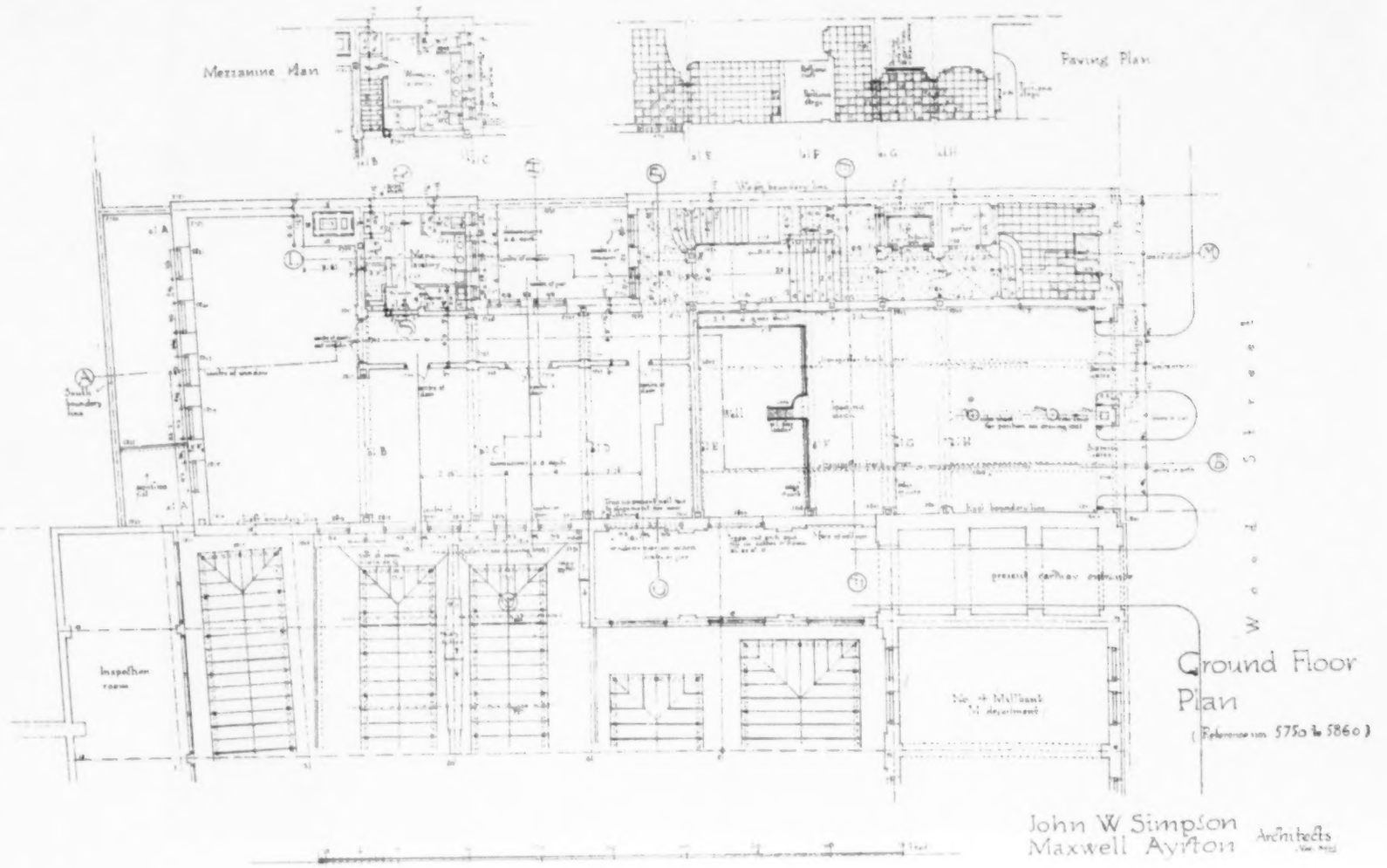
MR. GEOFFRY LUCAS, F.R.I.B.A., Architect.

[This oak chancel screen was erected in 1914, in memory of Miss Mary Davies, a Latin memorial inscription in mediaeval type being painted on one of the lower panels. The photograph shows the screen before it was toned and decorated with gilding, while since erection the work has been finished by the addition of the figures of Our Lord with St. Mary and St. John. The screen was made by the Warham Guild, of 28, Margaret-street, W., the architect being Mr. Geoffry Lucas, now of Messrs. Lanchester, Rickards & Lucas, 47, Bedford-square, W.C. 1.]

H M Crown Agents for the Colonies - Western Annexe

DRAWING NO 1004

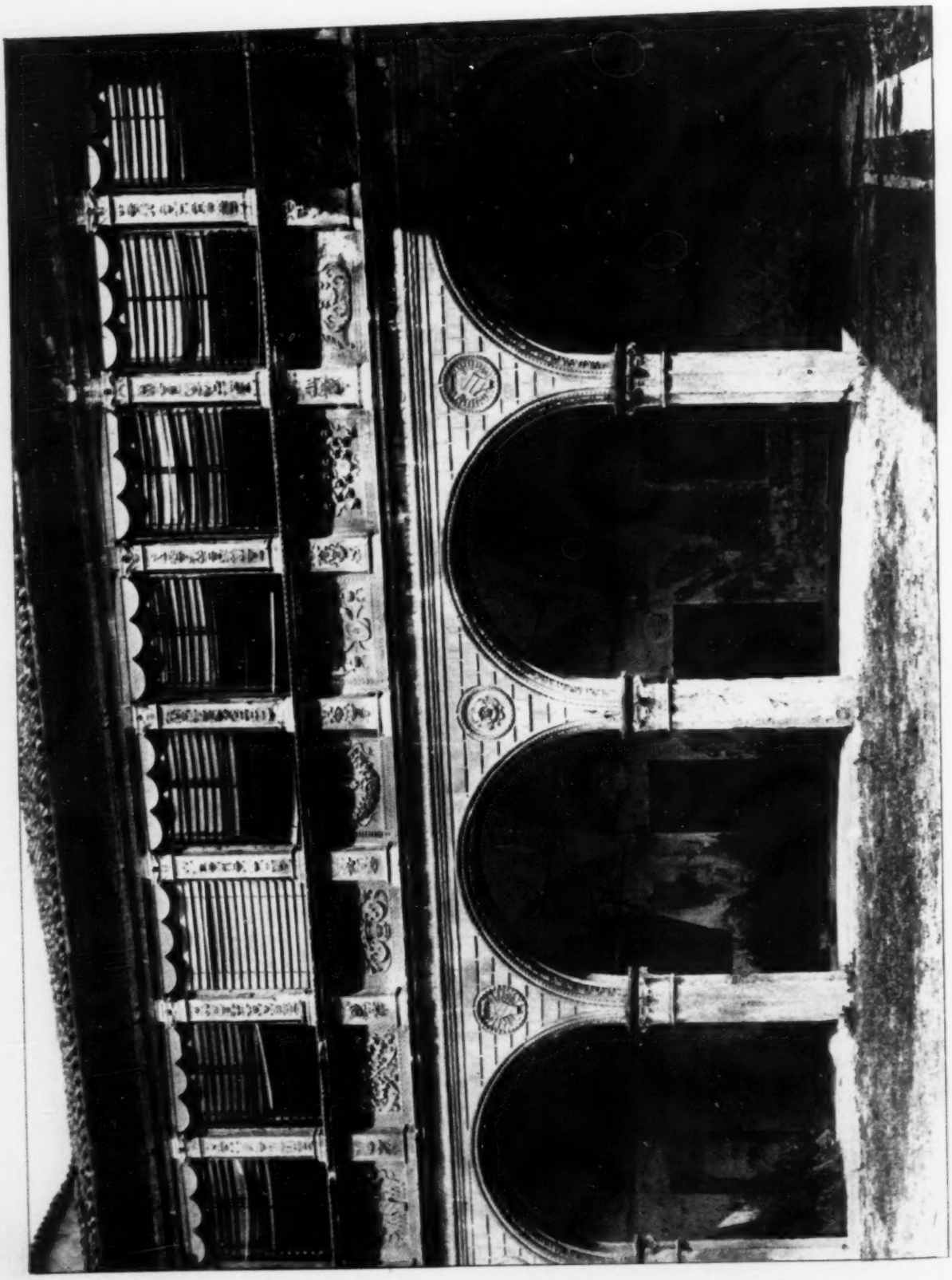
Register no .....



OFFICES OF THE CROWN AGENTS FOR THE COLONIES, WESTMINSTER. WESTERN ANNEXE.

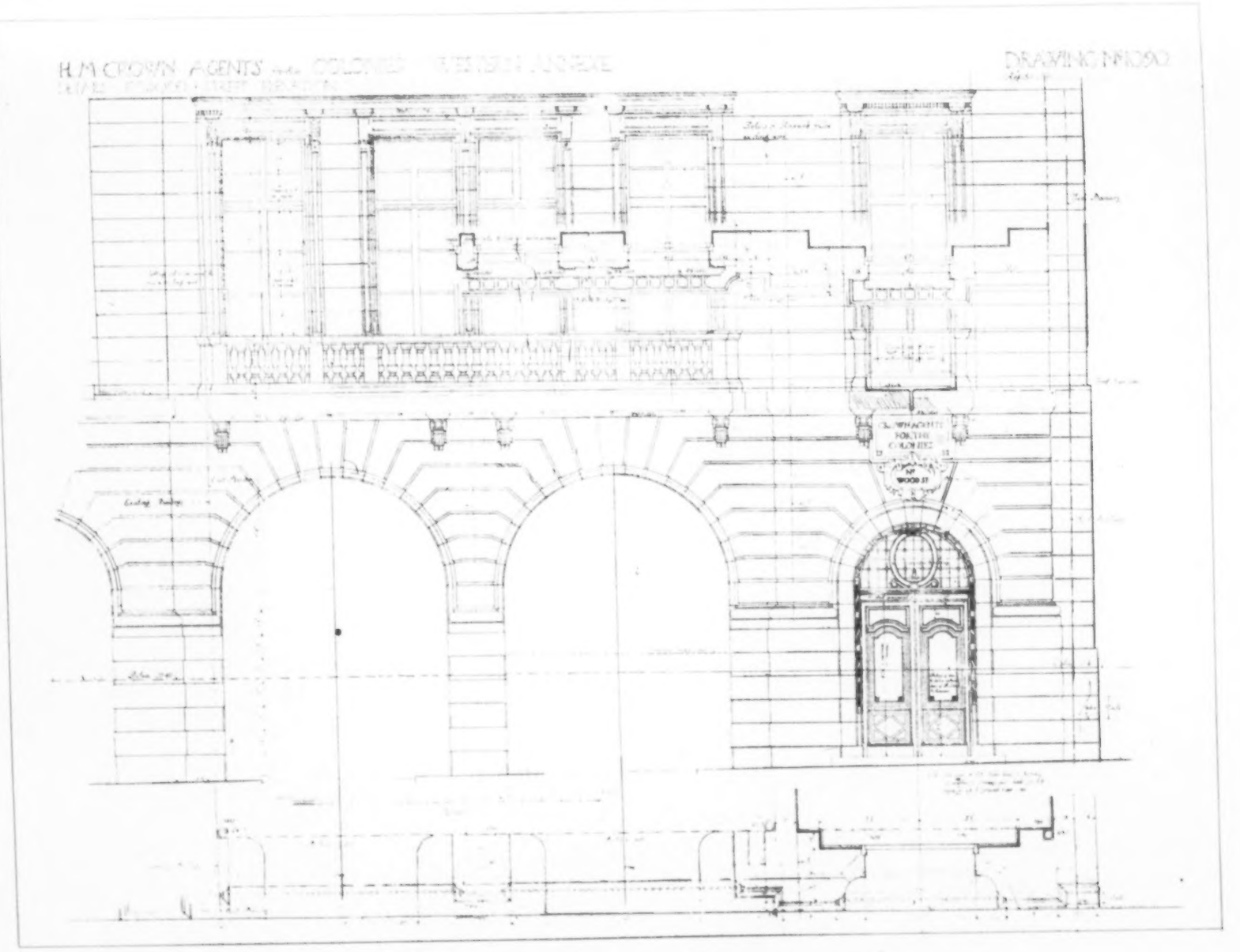
MESSRS. J. W. SIMPSON AND MAXWELL AYRTON, ARCHITECTS.

Messrs. J. W. Simpson and Maxwell Ayrton, Architects



BISHOP'S PALACE, VICENZA.

THE OLYMPIC THEATRE, VICENZA, BY PALLADIO.



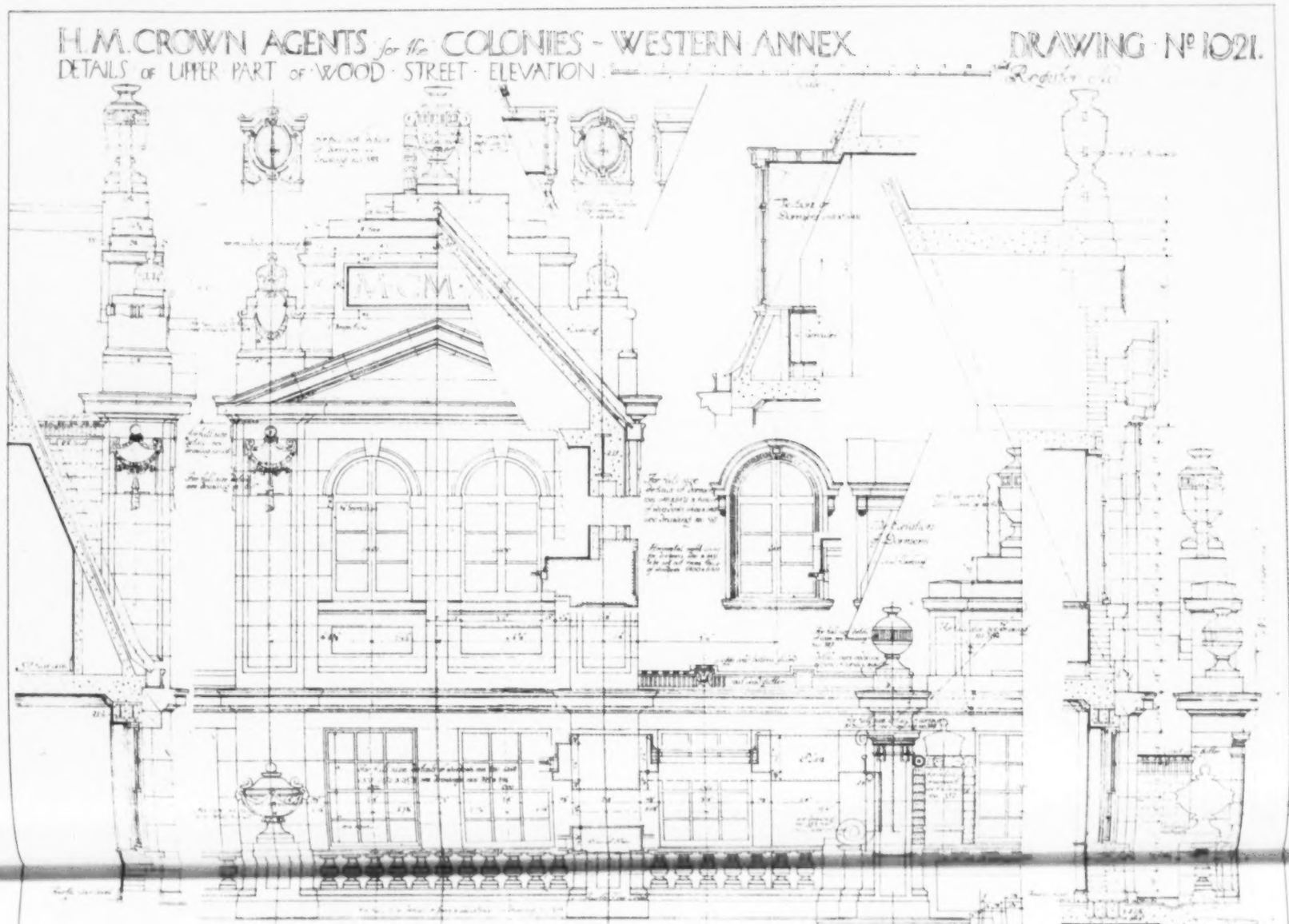
OFFICES OF THE CROWN AGENTS FOR THE COLONIES, WESTMINSTER. WESTERN ANNEXE.

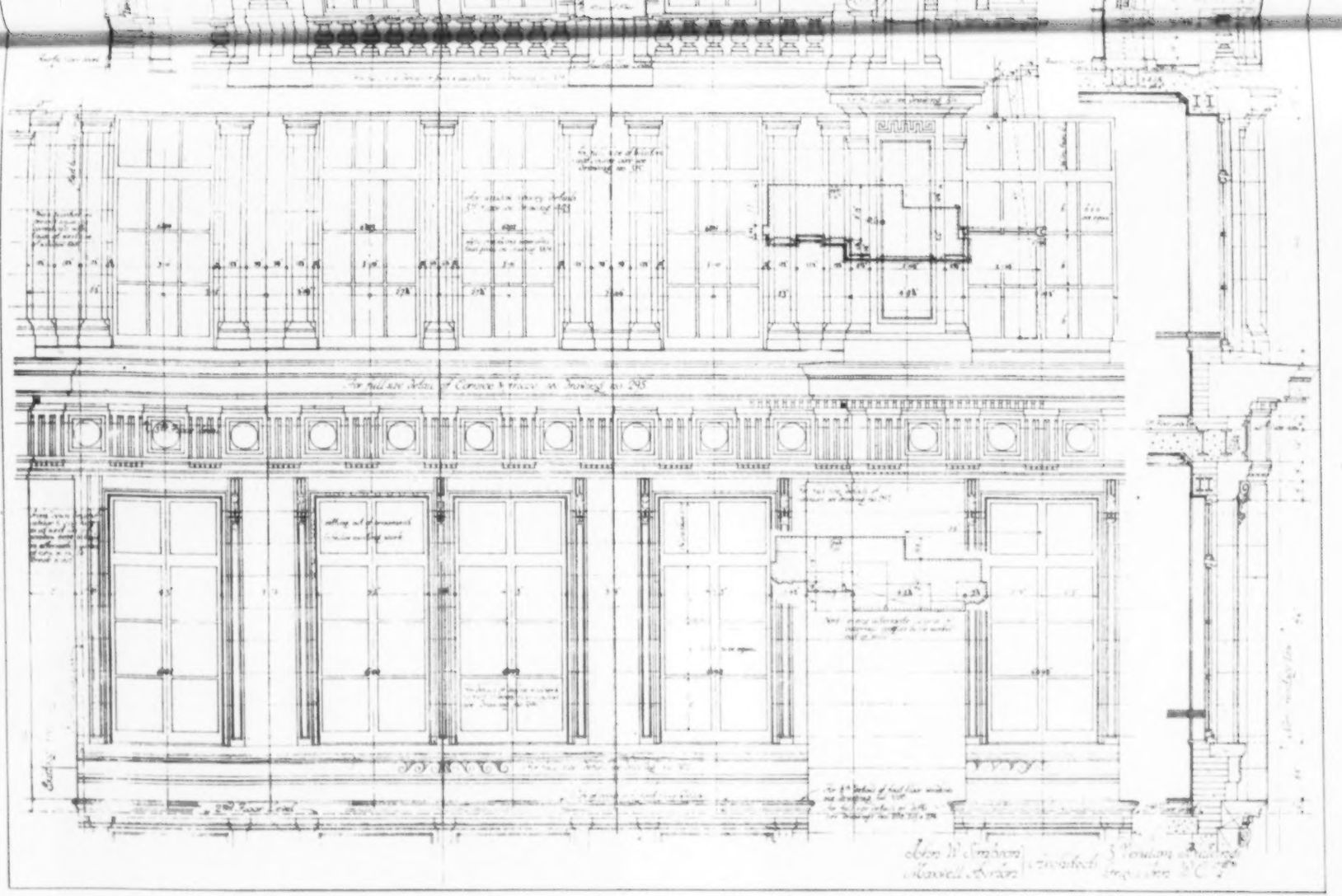
MESSRS. J. W. SIMPSON AND MAXWELL AYRTON, ARCHITECTS.

H.M. CROWN AGENTS for the COLONIES - WESTERN ANNEX

DRAWING Nº 1021.

DETAILS OF UPPER PART OF WOOD STREET ELEVATION.





OFFICES OF THE CROWN AGENTS FOR THE COLONIES, WESTMINSTER. WESTERN ANNEXE.

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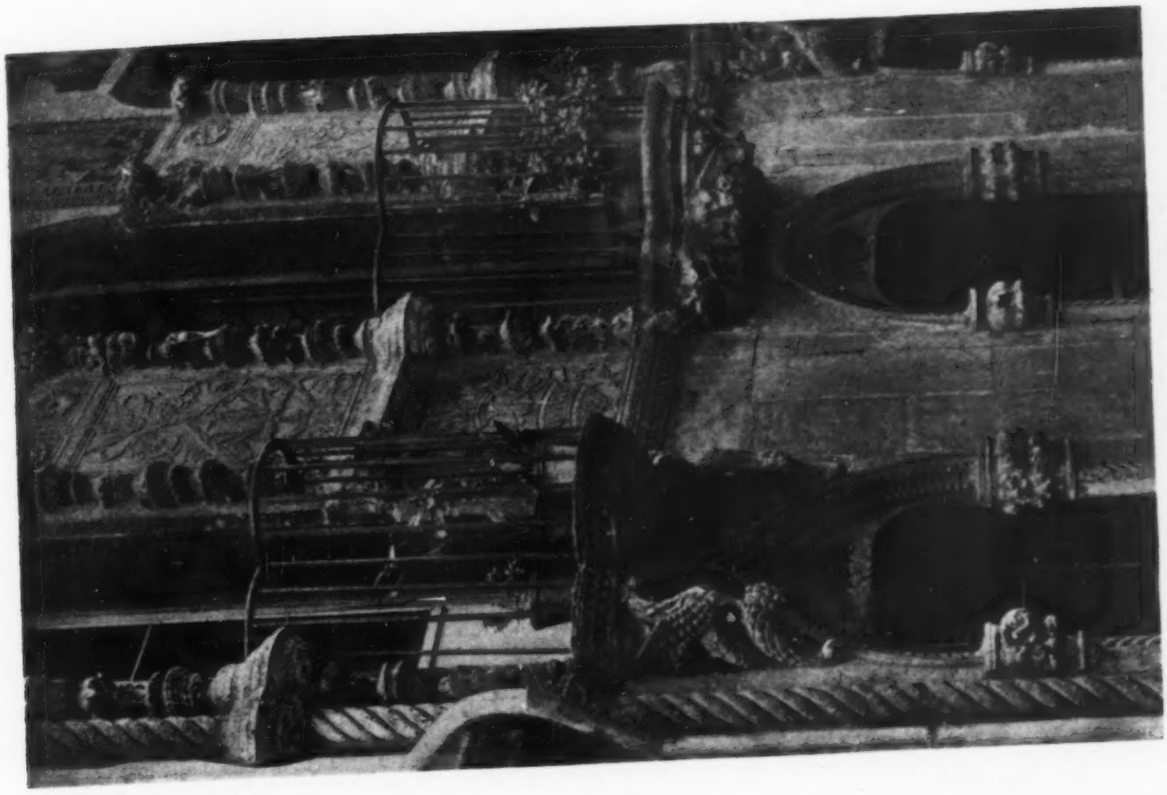


Vicenza : Palais Pigafetta.

(See page 53.)

Vicenza : Palais Valmarana.

IMPROVEMENTS IN STAINED GLASS.

By REGINALD HALLWARD.

THAT there is considerable improvement in stained glass cannot be denied. We see less of that dreary, conventional work without illumination or treatment with which we used to be familiar, while at no time were the available glasses more beautiful. When we hear mysterious allusions to "secrets" supposed to have been lost, we realise that they are no more than the secret known to any artist: that the beauty of materials does not reveal itself except in good hands.

It is doubtful whether the field of stained glass has been fully explored. Indeed, can it be said of any art that all its resources are known to us, since it lies in the very nature of art always to be creating them anew? That there are special difficulties with which the artist has to contend at the present time cannot be doubted; he has to do his work without the support of a tradition. The public familiar with the substitutes that abound is without any true guidance; the artist, unless born in that golden age when all are either artists or able to judge of the nature of art, is more or less an innovator.

I have always thought massed bands an excruciating form of music. Quantity, size, in themselves offer no alternative to beauty. The extent of colour in a window is not alone proof of it. Beautiful colour means more than this, and is not so easy; yet how often we hear the comment: "'I like plenty of colour' . . . or "as much colour as possible," which in the speaker's mind means volume, extent, opulence of colour, more often than beauty. Beautiful colour is essential; but just as good music does not lie in mere noise, so beautiful colour does not lie in the amount of it. The field is so wide and varied. It may be that the most subtle and beautiful colour is that which flashes, jewel-like, through wide fields of silver-white, enriched by well-applied brush work and stippling of the surfaces. It would be interesting to know whether one thing which I have found from experience is confirmed by others—that though there is value in the beauty of the uneven surfaces of the slab-glasses, they can also become a snare. We must not rely too much even on the beauty of the best materials. What the craftsman brings to the treatment is above all materials, and decides the result. The best windows I know are those almost wholly executed by the craftsman himself. Co-operation is both possible and desirable, but the kind of co-operation that exists is more often guided by economical rather than artistic considerations—is, in fact, delegation. It is always regrettable to me that a fine craftsman with powers of vision and treatment should not paint his own glass, so that we get a substitute by which the public is more easily persuaded, but the best part of the craftsman lost. We want the artist at first hand, imperfections and all. Is William Blake, when interpreted by Schuavonetti, better than the real Blake? Or are these concessions in order to conciliate a public opinion educated to the machine: "Decentiorem esse faciem in qua aliquis nævus esset."

Great as are the difficulties, impossible as it seems except from some higher leading than worldly interest, to overcome the obstacles which beset genius, there is yet no other way. No organisation to federate the workers in glass or any other craft can aid the prospects of art unless it is governed by sound principles of work. Otherwise we are only consolidating that which withstands beauty. There is much more stained glass work done than is at all justified by its intrinsic worth. The true craftsman will not benefit in such a way. It is better for him to retain his independence and trust to the influence of his own good work to support him.

The contract for glazing the great east window of York Minster is dated August 14, 1405, and it stipulates for the completion of the work in three years from that time. John Thornton, of Coventry, the glazier, in case he performed the work to the satisfaction of his employers, was to receive the sum of £10 in silver, over and above the stipulated price. Whether or not he was influenced by this consideration, it must be admitted that he succeeded in producing not only one of the most highly-finished, but also one of the most artistic works of the time. The details of this window are of the purest perpendicular character. *He was bound by the contract to perform the painting with his own hand.*

The significance of that last sentence is important. The Chapter, in including this condition, showed their recognition of the vital danger lying in delegation. We should do well to follow their example when giving our orders for glass windows. For work, when painted by assistants, though often very praiseworthy, becomes a little too sleek and respectable. There is less heat but more finish. Less of the adventure that the master's own treatment would have given it. It is a little too perfect. And the endeavour to paint in the artist's manner, which is sure to be imposed, tends to an exaggeration which becomes mannerism.

It is a hazardous if natural thing, at a time when there is so much talk of reconstruction, to direct our thoughts to the possibilities of improvement in a delightful craft like stained glass. There is also the fact that the subject does at the present time exercise the minds of craftsmen. There is, however, the ever present danger that we shall mistake the shadow for the substance. We are all familiar, when it comes to real change, with the doubts which spring up to confound the ardent mind. The reformer himself tells us that though he is in agreement, it is none the less not the right time! He would bid us defer it. It is no doubt desirable that we should measure the magnitude of the task before setting out to reform the world!

Reconstruction is a word almost too familiar. It is wise at once to foresee that reconstruction implies dislocation—that it destroys as well as builds; since new wine must inevitably burst the old bottles! Unless we can be sure that all stained-glass has reached the level of true craftsmanship and design, the advent of better work must displace the old. A change for the better, however, will rouse the latent forces of reaction. As always, the good must be fought for. Let us take for an example—one of many—the case in which a scheme of windows, carried out over a period of many years, is nearing completion. There are yet a few windows to glaze; but the congregation has changed. New officials are influenced by a different outlook. A respectable minority of old parishioners, looking back rather than forward, nurtured in the complacency of Victorian perceptions, revolt against change. The vicar, however, thinks the work ought to be done better, and the majority of the parishioners share his view. For the gentlest critic will perceive that in one window the head of the Saviour is represented as of the size of a bucket, and that the heads of the various saints are all the same! There is a badness lower than any level at which criticism can aim its darts.

A period of decadence is inevitably followed by dislocation. Our Victorian friends have to learn that in these matters their wisdom was frequently unwisdom, their taste a money estimate, and their art a sham. Though this must be said in justice to the claims of better work, one cannot but feel for those doomed to discover at the eleventh hour that the house they had thought to build to God was a house of cards, which, if touched by the breath of reality, would tumble to pieces.

Let it not be thought that I bring any general accusation against the work done in glass during the last twenty years or so, which has seen particularly fine work done by artists in churches. The instances I quote will none the less be familiar to all those who have contact with the subject. But will anyone suggest that we should follow an ill tradition for the sake of getting unity in badness, instead of dislocation and a few good windows? There is no reconciling the two; the better work is unconsciously out to destroy the worse; because stupidity is not always triumphant, nor the world upside down.

The above refers chiefly to the public and to the necessity for a new outlook; but is there not also occasion for reconsideration on the part of the artist? When we think of change, do we not tend to the same old fashion in achieving it? We shall form committees and hold meetings at a time when institutions, societies, organisations already tumble over each other, heaping Pelion on Ossa. It behoves us to examine a little more closely whether the changes and developments which are in the air are merely further symptons of the old unrest—just further steps down the old road, and the new road yet to be found.

I sometimes wonder whether it is not towards closer assimilation with the poet's vision that we must look for the renaissance of beauty. Organisation, reform, movements, societies, guilds! It seems—I do not know why it is, but I see that it is so—that these work as much against as for progress; as too many clothes are unhealthy for the body. Obstruction and adversity even are such a fine school. Suppose we directed our thoughts to the value of a foundation of adversity, instead of prosperity! Even in

the near future I think that it will go somewhat against the estimate of a man by his fellows that he should be prosperous and successful, as the late Mr. Smiles and the world has it. This is no new doctrine, for the Greeks themselves set the example of such an attitude. Who, taking note of the facts of life as they exist to-day, can doubt but that for our fair sister Beauty, the way of Calvary lies straight before her. So much do I feel this that when I see the tendency to rely on organisation and change for the solution of our difficulties, I find myself saying there is then no hope for art. Yet is it not at this hour the burden of so much of the wisest thought of the world that Beauty alone can save it? It is in this sense that our time is so vast in its potentialities, so incredible in its hopes. So I suggest as against my reforming friends that perhaps disabilities are the best security for art after all. That the isolation which the artist feels will help him, because it will distinguish him. We shall find him in that he has found himself.

EXHIBITIONS OF THE WEEK.

The Pastel Society: The Burlington Fine Arts Club.

THE twenty-first exhibition of the Pastel Society, which opened on Monday last, January 5th, at the Galleries of the Royal Institute, shows some good work in this very attractive medium. Pastel has qualities of its own, not only in portrait and figure—in the rapidity of conveying impression and vibrant quality of the flesh tints—but also in landscape; in portrait work it attained its highest point in the eighteenth century, in those brilliant portrait studies of La Tour, Perroneau, and Drouais, but their tradition has always survived in France, and, though more tardily, been developed in English art. This is why the Pastel Society occupies such a precious and useful place; and the present exhibition, with a fair percentage of weak painting, has also something good to offer.

Notably the pastel portraits of Mr. Isaac Cohen seem to us in the true lines of this art; among these the best in quality is the little "Helen, daughter of Bram Valentine," and after this we should place a clever "Portrait Sketch," "Joan Underhill," and a landscape study, "Autumn." We have often alluded in these columns to the possibilities of finished landscape in pastel, and this year the landscape is of increased interest. In the West Gallery William Pedworth ("Entrance to the Forest," "The Old Barn"), Edward Chappel ("Moonrise in France"), and T. W. Hammond ("Off to the South" and "A Seascape") lead us on to the South Gallery with Leonard Richmond's finely-composed colour harmonies ("Barnard Castle," "Moonlight," and others), which occupy the place of honour on the end wall, to Littlejohn's ("A Spanish Fishing Village," "Chalk Quarry, Hewes," "Evening"), and to Davis Richter ("Ross-on-Wye," "Coaling," a really magnificent panel), and Fred Footet ("Sunrise" and "Design, Blue and Gold," this last a nude girl, with golden flesh tints against a blue background). Of course, figure, and more directly portrait work, will always claim a first place in pastel art; and here the President of the Society sends an admirable head and bust of "The Lady Kensington," kept in a warm sepia monotone, while R. G. Eve has a set of charcoal portrait studies which have almost the directness of a Sargent drawing, and Charles Marshall has a group of heads of lovely English girls, under appropriately charming names—Yvonne, Alys, and Isobel—while Mrs. Adrian Hope has still the fault which we ventured to point out before, that her portraits achieve a charm at the expense of strength, though her little "William, son of the Hon. William Cecil," has the true character of child life.

The Burlington Fine Arts Club winter exhibition, which we hope to refer to in detail later, is a pleasant exhibition of very choice paintings, as well as furniture, without expressing any special period or school. Thus we may begin with a cassone panel by the Sienese Francesco di Giorgio, and go on to Carlo Crivelli, to Guardi, in a wonderful Venetian scene, to Etty in a brilliant nude, and to Raeburn in his noble double-portrait of Sir John Dacre and his wife.

THE SURVEYORS' INSTITUTION.

IN his Presidential Address to the Surveyors' Institution, Mr. Andrew Young made many suggestions for the future conduct of the Institution, and these were discussed at a meeting of that body last month. The suggestion that a registrar, with duties similar to those of a dean of a university, should be appointed, was generally approved, and Mr. A. W. Dawson made some interesting remarks on this point. Primarily, he said, a man of strong personality would be required for the post, able to draw to himself both members and students. Probably it would be best for him to be a professional man, and it would be necessary for him to study deeply the psychology of the surveyor. It would not be his duty to educate the student or to force himself on him, but gradually he would become a human storehouse in all matters pertaining to the profession, from which the student could draw. He would get to know not only the business side of the student but his other interests, and would thereby determine his natural bent and be enabled by his suggestion to direct him to paths most suitable to his capabilities and desires. At the same time it would be necessary for the registrar to gain the confidence of the members generally, and be able to draw upon their store of knowledge and experience. Under this proposal, the student immediately on entering the profession would come into touch with the human element, and could be guided in the right direction. He believed that other institutions would follow the example, and eventually the profession throughout the Empire would be connected by these human links, which would afford to every individual the possibility of placing his service to the best advantage.

The Palestine Museum.

The Palestine Museum, formerly part of the Bezalel School of Arts and Crafts, has now been established in Jerusalem, and will be open on three days per week. The Museum contains over three thousand exhibits, including statuary, paintings, pottery and coins. Many pieces of sculpture and paintings have been promised to the Museum by Jewish artists in various countries.

Concrete Cottages at Acton. (See page 62.)

CONCRETE COTTAGES.

THE Acton Town Council is now proceeding with its housing scheme, and is about to erect 100 cottages at North Acton on lines proposed by Mr. Gordon Selfridge. The plans and special method of construction were evolved by Mr. Maberly Smith, of Henley-on-Thames, who has patented his system, which has received the approval of the Ministry of Health. These plans and details were brought to the attention of Mr. Gordon Selfridge, who decided to found a building organisation, which has been named The Victory Construction Co., Ltd., with offices at 30, Orchard-street, London, W. The directors of the company include Mr. F. D. Huntington, of the company which is building the extensive additions to the Selfridge building in Oxford-street, and Mr. J. P. Lloyd, the President of the Building Trades Operatives' Federation. No profit whatever will accrue to the Victory Construction Co., which is aiming at demonstrating an economic, scientific and speedy means of solving the housing question.

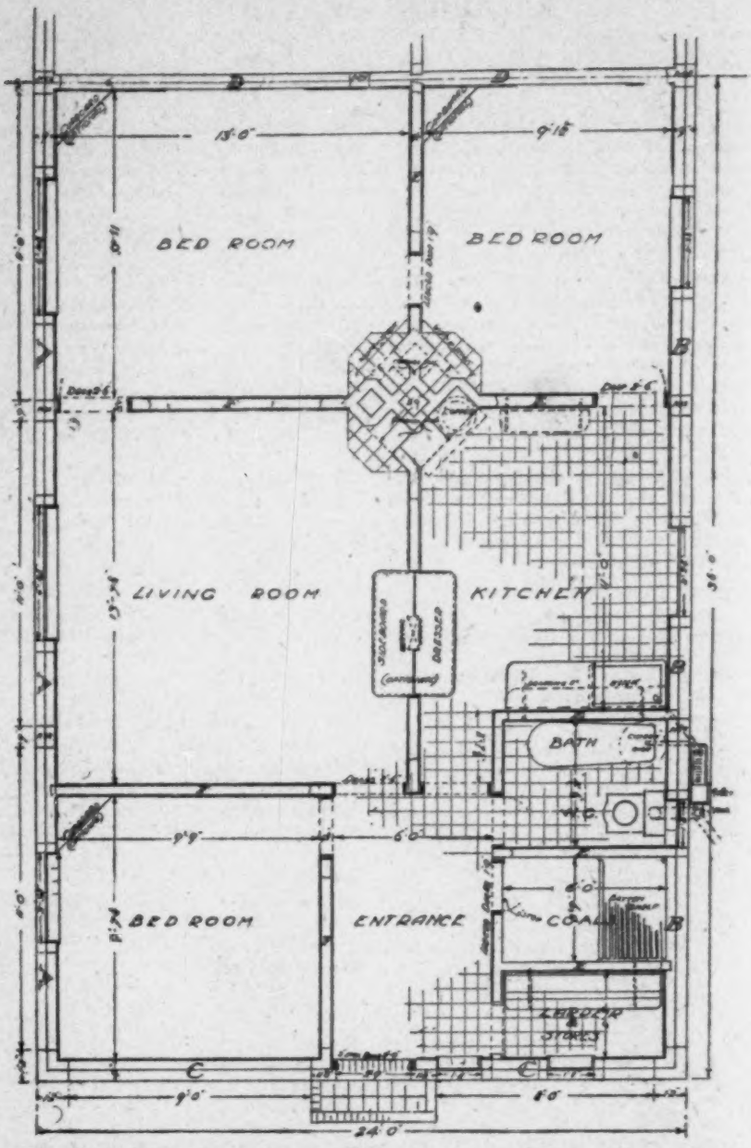
In placing details of the building scheme before the residents of Acton, the Chairman said that the Council proposed to provide land and lay out the necessary sites with roads, sewers, &c., on which Mr. Selfridge proposes to erect cottages of approved specifications, to publish details of cost, and, when erected, to offer the houses to the Acton Council together with the Treasury bonus to which Mr. Selfridge became entitled. On those terms the Acton Council might purchase. It would find purchasers or tenants, but in any case no profits were to be made at any time, either by the Council, the builder or subsequent owner. The approximate cost of erecting the houses would be £450 each, and the net cost to the occupiers would be arrived at by deducting from this the amount of the bonus, which is estimated at £125. The actual cost of the site, roads and sewers would be covered by a small ground rent.

Except that the Treasury bonus goes to the occupier, the proposed scheme is self-supporting and is in no way chargeable on rates and taxes. Subject to the early approval of the Ministry, it is expected that many of these cottages will be completed before Easter, and 100 before midsummer.

The plan which we publish shows a typical cottage of the semi-detached type. The houses are of the bungalow type, with a living room, 13 ft. square, three bedrooms, respectively 10 ft. by 9 ft. 9 in., 13 ft. by 11 ft., and 9 ft. by 11 ft., and the kitchen, 11 ft. by 9 ft., with the usual additional accommodation, including larder, coal cellar and bathroom. The area of ground to each house is about 4,000 sq. ft., of which the house occupies about 1,000 sq. ft.

Window sashes of solid steel and interior walls of concrete are provided for. The floors in kitchen, entrance-hall, larder and bathrooms are proposed to be laid with red tile or a composition which will stand hard wear. In the construction small brick piers are built at all angles of the building, and at intermediate points of the line of the walls, say 12 ft. apart. Between each of these is set a sheet of vertical damp course, which is wider than the piers. The moulds for the concrete consist of two scaffold boards each 9 in. wide set on edge, say 12 ft. long. These are clamped to the piers, and a trough 18 in. deep and 11 ft. 6 in. long is formed. A length of damp course sheeting is hung between the piers, and temporarily clamped in such a way that it hangs like a curtain down the centre of the mould. The mould, after being plastered with stucco, is filled in with concrete on each side of the vertical sheet of damp course. Each length of the sheeting overlaps the one beneath it, and those on each side of it. Both halves of the wall, the sheeting and wall ties are welded into a solid mass. The process is repeated until the wall is carried up to the desired height.

The cost of the houses might be slightly increased by the installation of gas and electric light, and also by the dressers and the various cupboards selected by tenants or provided in any plan finally approved by the authorities. The keynote to the success of the effort and the cheapness is standardisation.



Plan of Single Cottage to be erected by the Victory Construction Co., Ltd.

BUILDING MATERIALS COMPETITIONS AND EXHIBITION.

IN connection with the Lyons Fair, to be held in the spring of this year, it is intended to hold a "Congress of Dwellings." The programme is a most ambitious one, comprising: (1) A competition for processes or methods of extracting and working natural materials, clearing sites, and re-using the materials remaining in the devastated regions in the war area; (2) a competition for transforming natural materials into wrought or half-wrought materials; (3) a competition for machines; (4) an exhibition of machines, products and materials for building purposes. In the competitions only machinery or materials which are improvements on those in use before the war will be admitted.

Competition (1) includes the extracting and cutting of all kinds of building stone, marble, chalk, slate, &c., and methods of disintegrating sites by explosives and of avoiding the dangers arising from the presence of unexploded shells in the war area. Competition (2) comprises the manufacture of all kinds of building materials, such as lime, cement, plaster, bricks, tiles, artificial stones, and roofing-felt, and the extraction and working of asphalt and bitumen. Competition (3) is divided into various sections: (*a*) demolitions and earthworks (such as machines for digging trenches and foundations); (*b*) scaffolding, barrows, trucks, stretchers, crushers, concrete and mortar-mixers, block-making machines, roofing systems, and wall-facing machines; (*c*) all kinds of reinforced concrete and brickwork, ramming machines, &c.; (*d*) iron frame-work, lifts, cranes and saw-mill machinery; (*e*) machinery for joinery work; (*f*) roofing processes, including concrete, asbestos, tiles, bitumen and zinc, and water and gas pipes; (*g*) iron-working machinery; (*h*) heating and ventilating apparatus; (*i*) painting and glass ware; (*j*) transport systems; (*k*) special materials for houses in rural districts.

Machines will be required to work materials provided by the promoters, in addition to the materials provided by the manufacturers, and the following points will have chief weight with the jury in the distribution of the awards:—size and mobility, protection against shock and the infiltration into the mechanism of sand and dust, cost, protection against accidents, and the amount of labour required. The processes and materials enumerated are only given as an indication, and do not preclude others. Further particulars may be obtained from the Bureau de l'Office Central de la Construction et de l'Habitation, Hotel de Ville, Lyons, France.

RETAINING WALLS.

SINCE the invention of reinforced concrete and its fairly general adoption in the building trades, retaining walls may be divided into two great classes—those in which tension plays a part in resisting the overturning moment, and those in which it does not. In both cases, however, the first essential for the designer is a knowledge of the amount of the thrust exercised by the retained earth against the inner face of the wall, and it is with this point alone that the present article is concerned. Some of the current text-books are anything but well arranged; others are not at all explicit on this subject, and there is a widespread tendency to give equations without any attempt to support the formulæ by mathematical reasoning. Now, while it may be true that building trade students require to be practical men rather than theorists, and while it may also be true that most people will tell you, "I have not a mathematical mind," yet the facts remain, first, that a practical man is more or less practical as he is more or less supported by mathematical knowledge, and, second, that the ordinary normal man has an innate faculty for mathematics—up to a reasonable point—and it is his modesty (often coupled with the fact that he has been taught badly) which leads him to say that he has not.

Broadly speaking, there are two principal theories of this matter. The first is named after the immortal Rankine, and the second is generally referred to as the "wedge theory." Both are good, and we hope to show that the practical results arising from them agree moderately closely with each other; but it is felt that in this, no less than in spiritual matters, it is impossible to serve two masters, and a good deal of the confusion referred to above appears to be due to the fact that the authors of the text books have not decided whether they will follow Rankine or the later writers who invented the wedge theory. But first, the subject is cloven in two by the distinction between walls retaining earth with a level surface, see Fig. 1, and those retaining "surcharged" earth—Fig. 2. Both theories yield the same formula for Fig. 1, viz.:—

$$P = \frac{wh^2}{2} \quad \frac{1-\sin\phi}{1+\sin\phi}$$

in which ϕ is the angle of repose of the retained earth. But it is obvious that this formula is only a special case of two general formulæ; and these are as follows:—

RANKINE—

$$P = \frac{wh^2}{2} \cos\psi \left\{ \frac{\cos\psi - \sqrt{\cos^2\psi - \cos^2\phi}}{\cos\psi + \sqrt{\cos^2\psi - \cos^2\phi}} \right\}$$

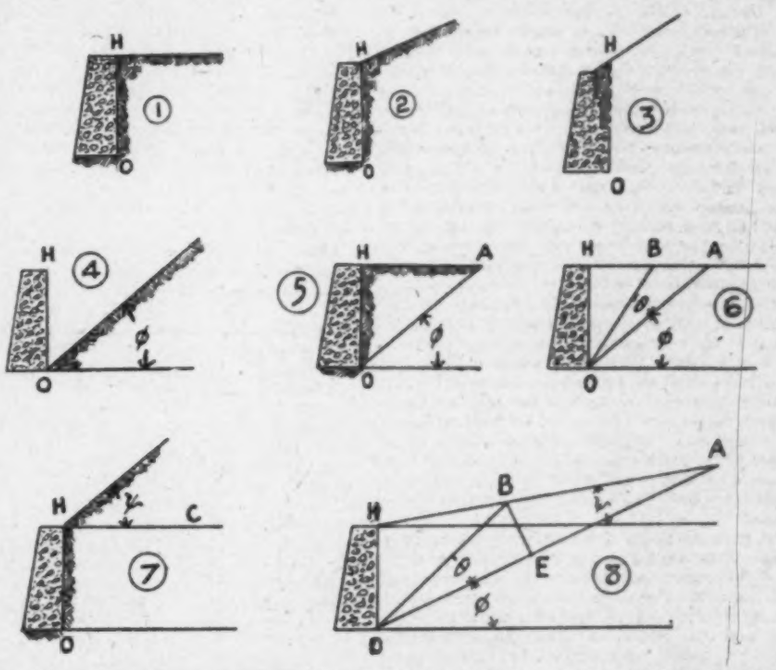
WEDGE THEORY—

$$P = \frac{wh^2}{2} \left\{ \frac{\cos\psi - \sqrt{\cos^2\psi - \cos\psi\cos\phi\cos(\phi-\psi)}}{\cos(\phi-\psi)} \right\}^2$$

in which ψ is the angle which the surcharge makes with the horizontal.

The shape of the cross section of the wall is comparatively unimportant, for all authorities are agreed that the thrust, the amount of which it is desired to ascertain, is to be taken as exerting itself on the vertical section OH. If the wall were of the section shown in Fig. 3, or of any section analogous thereto, the surface against which the thrust is to be regarded as pressing is still that marked OH, and the weight of the prism of earth shaded in the drawing is to be added to that of the wall itself for the purpose of computing the resistance to overturning. Now, to expand the wedge theory, consider Fig. 4, in which the wall is represented as having been built at the foot of a bank which has been exposed to the weather for a long time, so that the earth has settled down to its own natural angle of repose and has no tendency to overturn the wall. Fig. 5 represents the same wall with the earth filled in level with the top, and it will be very obvious that for every foot of the length of the wall a prism of earth, the end section of which is the triangle OHA, will be, or may be, trying to slide down the inclined plane OA and will only be retained in its place by the reaction from the surface OH. "Will be or may be" is written deliberately, because therein lies the whole point of the theory. If the prism OHA acted as a single lump, there would be no tendency for it to slide at all, as the friction between it and the plane OA would (by hypothesis) be sufficient to prevent any such movement. And it is possible that some smaller prism such as that indicated by OHB in Fig. 6 will detach itself, and by its tendency to slide will be operative to cause the thrust.

The plane OB is called the plane of rupture. It is recognised that it is a pure assumption that this surface will be, in point of fact, a plane, but that assumption is adopted, almost of necessity, to render calculation practicable. It is certain that the pressure which is exerted against the wall is proportional to the area OHB multiplied by the tangent of the angle θ. There will be



certain constants, of course, but we need not concern ourselves with these, and the problem resolves itself into this—"determine the angle θ which will result in a maximum thrust; *i.e.*, which will give the greatest value to the product, area OHB × *tan* θ. This is a comparatively simple problem in the differential calculus, and the writer feels that it is a pity that, at any rate, the elements of that branch of mathematics are not more generally included in the curriculum for building trade students. However, even without the calculus, a very few calculations and a graph will serve to show that when the surface of the earth is level the thrust becomes a maximum when $\theta = \frac{1}{2}(90 - \phi)$, and this quickly yields the formula which, as stated before, agrees with Rankine's formula for level earth.

The foregoing method is advocated explicitly in at least two well-known text books—General Scott Moncrieff's "Principles of Structural Design," and Tarn's "Science of Building"—and both authors are careful to point out that the value of θ given above is restricted to those cases where the surface of the earth is level. That it is not superfluous to insist upon this limited application of the formula is evidenced by the fact that another widely-used book uses this value of θ in every case—even when there is a surcharge. And again, that it is not superfluous to insist that the theory elicits this value of θ on account of its yielding a maximum thrust (always for level earth) is evidenced by the fact that another class book, which successfully dispenses with higher mathematics, states that if a box be made, with one glass side and a hinged front, and filled with earth, it can be shown by opening the hinged front and looking through the glass side, that the plane of rupture is at the stated angle. An ounce of experiment is worth a pound of theory, no doubt, and if the author of the book in question has really made the experiment a sufficient number of times, and with a sufficiently large variety of earths under various conditions of moisture and friction, and has always obtained the desired result, he is entitled to the credit of his researches; but, at any rate, the value of θ is adopted in this theory, because the authors of the theory believed the actual plane of rupture to be an uncertain quantity, and, wishing always to be on the safe side, they adopted the value which would give the greatest thrust.

When the wedge theory method is adapted to the case of a wall with a surcharge, it is not so easy to determine an expression for the value of the angle θ. It can, however, be shown that when the product of the area OHB and the tan θ is a maximum, the area of the triangle OBE is equal to that of the triangle OHB, from which fact as a basis, the value of P, given above, may be found.

The following table gives the comparative values of the calculated results of the two methods for certain values of the angle of repose, θ; and the angle of surcharge, ψ.

CO-EFFICENT OF $\frac{wh^2}{2}$

ϕ								
45	R .1818 W.195	.1938 .2002	.208 .216	.232 .236	.269 .260	.34 .305	.7071 .5	
40	R .2168 W.2475	.2502 .27	275 .286	315 .318	.388 .364	.766 .5866		
35	R .2936 W.317	.3218 .351	.364 .381	.44 .434	.8192 .6711			
30	R .3677 W.36	.415 .438	.492 .502	.866 .75				
25	R .4603 W.5	.546 .565	.9063 .8215					
20	.5841 .62	.9307 .8831						
14	.9703 .9412							
	14	20	25	30	35	40	45	ψ

R=Rankine, W=Wedge.

"CONVENIENT HOUSING"—II.

SOME IDEAS FROM CANADA AND AMERICA. SIMPLIFYING HOUSEWORK.

In a previous article under this heading, I dealt with the Canadian and American kitchen and the heating of the house. We will now consider further features by which the domestic labours are reduced and the home comforts increased.

Mention was made of the basements, and also the back porch. The former is necessary where houses have central heating; the latter is usual where there is no basement and often where there is one. These basements cover the whole house site and are usually about 8 ft. from floor to floor. Where the cost of excavation is not too great they may be sunk three or four feet below ground, but are otherwise on ground level. They have walls to at least two feet above ground level, and floors of concrete and are lighted by windows. The furnace is usually centrally placed, and a stairway leads to the upper floors. The house water supply enters the building here and has a stop-cock with lever handle so that in case of need the water can be cut off without leaving the house. In one corner there will be two laundry tubs fitted with waste and hot and cold water. They are either of zinc, enamelled iron, or, for cheapness, of concrete. There is now on the market a very convenient washing machine which the better-off housewives prefer, as it reduces the labour to little more than turning a handle, or it may be attached to the electric power where this exists. The housewife, after finishing at the tub, carries a few articles to the door; outside there is a galvanised wire clothes line passing over two wheels, about 7 in. in diameter, one at the door the other some way down the garden. The clothes being pegged to the line, the wheel is given a turn and the clothes go down the garden; when dry they are brought in by reversing the action. Compare this with the still usual English method; a battered zinc tub to be filled by hand, probably from a copper, a heavy basket of clothes to be carried down the garden, and the same needless labour and waste of time to collect them.

The back porch is fairly large—about 12 ft. by 6 ft. or 7 ft.—and usually formed in an angle of the building, a third side also being enclosed in some cases. On the open side there will be a screen door leading by a few steps down into the garden; between the posts supporting the ceiling, panels filled with copper wire screening are formed. This porch is sometimes used for the laundry work instead of the basement, housewives preferring to keep the smell of washing as far away as possible, whereas when done in the basement the smell of suds is apt to rise into the house; on the other hand, in the winter the latter is more sheltered and warm. But the back porch has very many uses; often in hot weather the ironing is done there, and as it is lighted with electric light it can be used in the evening. Tea cloths, and in wet weather washing, can be hung out under cover and yet out-o'-doors to dry; vegetables will be stored in a cupboard in one corner; boots are cleaned on a shelf with drawer for brushes and blacking; odd jobs of mending are done in another space; clothes are brushed, and even the children are sent here to play on wet days. In fact, the back porch, screened and partly sheltered, is one of those useful places the full value of which it is impossible to explain.

The habit of screening exterior doors and windows has much to recommend it from a hygienic point of view, but it is by no means easy to make the result sightly except at considerable cost. There are many varieties of screens on the market, that usual in the cottage home is cheap and fixed by anyone (for windows about 1s. 6d., doors 8s.). The doors are hung on spring hinges and open outwards; there is a small catch to keep them closed which automatically releases. The sash-window screens are placed under the lower sash when open. For casements a second screened casement is the cheapest form. The object of screens is to prevent insects (especially flies) from entering the house, the fly being considered almost as objectionable as the bug or flea. The fly not only carries disease, but adds to the housework by discolouring picture frames, mirrors, walls and windows; flies bring spiders and their webs, all of which add to the labour.

As stated previously, some houses have direct communication between dining-room and kitchen, while others have a pass pantry. In the latter case there will be swing doors, and the pantry will be fully equipped with sink and ample cupboards.

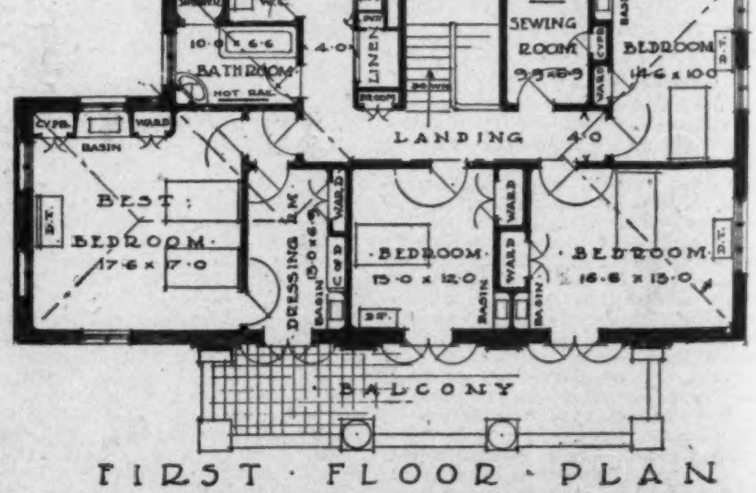
In the dining-room, especially where there is a pass pantry, there will be a built-in sideboard having a hatch above the shelf-top, and above this will be cupboards, often with leaded glass doors. At the back of these cupboards other doors open into the pass pantry, or kitchen, as the case may be. The process of laying and clearing the dinner table is much shortened by this, since the housewife has only to walk from table to sideboard for everything, and when clearing passes the dirty dishes through the hatch. Where there is a pass pantry this hatch is close to the left of the sink, where the dishes can be reached by those washing up, and when ready put back into the sideboard without moving half a dozen steps.

The practice of building-in features such as sideboards, bookshelves, &c., is much more common than in England, and while it undoubtedly adds to the general cost it is actually a saving when similar articles have to be purchased separately. A house thus half-furnished is a great advantage to those just starting in life, or who do not care to be burdened with much furniture. Again, rooms so furnished may be designed most tastefully instead of being mere plaster boxes that breed despair in the beholder. Walls are seldom papered, but have a good washable distemper. Where it can be afforded there is a great demand for beamed ceilings and panelled, or part panelled, walls in the parlour. These beams are false, being built up of three-quarter inch stuff with stuck mouldings. The panelling, varying from 4 ft. with a plate rail at the top, to 7 ft. and a plaster freize, is made in stained fir selected for serpentine markings in the grain, or filled in between the muntins with burlap or other suitable material. Comfort so often goes hand-in-hand with some simple decoration, and the drudgery of housework is so much influenced by the pleasure and pride derived from keeping things worth while at their best, that no opportunity should be missed to adorn our cottages with simple but tasteful finish.

The bathroom is fitted with white enamelled fixtures, the exposed plumbing, such as waste and supply pipes, taps, &c., are nickel-plated and look extremely well, and are easy to keep clean. Walls are often tiled as described for the kitchen, and the room will be warmed by a radiator. Built into the wall at a convenient height, and occupying the space between studding, is a small cupboard with a looking-glass in the door and a shallow shelf below; here the man of the house usually keeps his shaving kit, and the remedies for the lesser family ills. These bathrooms are comfortable, convenient, and inviting, and are in consequence thoroughly well used and not merely kept for Saturdays only.

When it is remembered that the type of house so far described, even when in the country, will have the telephone, and even in small country communities electric light (which also means electric irons, toasters, and may be even a vacuum cleaner), it can well be imagined that for comfort and labour-saving they are far ahead of our English houses of a similar kind. I have considered the house in the conditions as nearly approximating to our own as can be, that is, in a fairly well-populated district, either country or town. In such wide lands as Canada and America there are pioneers settled in isolated ranches miles from any kind of town who do not have these comfortable and labour-saving homes, but as we have no part of Britain, except, perhaps, the wild North of Scotland and the mountains of Wales, so situated, they cannot be considered in an article dealing with more settled conditions.

It is neither desirable nor possible to copy any other countries in the matter of housing. But it is very apparent that we in England shall do well to watch the development in building in other lands, and at least design our own of equal merit. Prejudices that, without serious inquiry and test, prevent the introduction of new ideas and new methods of construction, where these may be beneficial and not detrimental to the expression of the national life, should be boldly swept aside. "S."



FIRST · FLOOR · PLAN

Third Prize. A sewing room and a most pleasant looking balcony are features in addition to labour-saving details.

By permission of the Daily Mail.

Labour-Saving House Competition.

Third Premiated Design, by MR. E. W. ARMSTRONG.

HOUSING AND TOWN-PLANNING NOTES.

Medical Officers' Annual Reports.

The Scottish Board of Health has called upon all local authorities in Scotland for a resumption of the annual reports of Medical Officers of Health and Sanitary Inspectors on the health and sanitary conditions of their areas. The report for the year 1919, which has to be forwarded to the Board of Health by April 30, is to cover all the matters coming under the jurisdiction of the Medical Officers of Health and Sanitary Inspectors, including sanitation, housing and town planning, water supply, drainage, etc. The report for 1919 is also to contain a brief survey of the sanitary work carried out, and the statutory proceedings taken, during the years of the war when the regular reports were in abeyance.

Warrington.

The local Master Builders' Federation has expressed its willingness to co-operate with the Housing Committee of the Corporation in the erection of houses on the basis of cost plus 8 per cent. for the use of plant and a further percentage for profit.

The Housing Hiatus.

At the annual dinner of the Edinburgh, Leith and District Building Trades' Association, the President, Mr. David Angus, said that the proposed housing subsidy was absolutely wrong from every point of view. He thought the solution of the whole economic chaos would be the removal of all restrictive legislation and Government control, a move which would bring about the revival of trade competition and a period of solid hard work by everybody.

Edinburgh Slum Clearances.

A sub-committee of the Edinburgh Town Council has remitted back to Mr. Horsburgh Campbell (Director of Housing) for completion a memorandum dealing with the reconstruction of houses in nine areas, which have been certified as unhealthy. In his report, Mr. Campbell stated that the estimated cost would be about £280,000, and he recommended that the houses be surveyed with a view to ascertaining the number fit for reconstruction. This process of salvage was receiving the support of the Scottish Board of Health, and could be carried out at about half the cost of the erection of new houses in the suburbs.

Weekly Housing Return.

The usual statistics relating to the progress of housing schemes were not compiled by the Ministry of Health for the week ending December 27, 1919. Publication will be resumed next week.

State-aided Housing Schemes.

The Minister of Health has revised the regulations governing the payment of State aid to local authorities in the event of loss in the future on housing schemes. The revised regulations show that, while the rent to be arrived at and to be secured if possible by 1927 is one which will give a fair economic return on the then cost of building, yet if it is not found reasonably possible to obtain such a rent the local authority will not be penalised and the difference will not fall on the rates. Any difference between the Minister and the local authority with regard to the rent to be charged will be referred to a standing tribunal to consist of five members—two appointed by the Minister and two by associations of local authorities, with an independent chairman. It is provided that the State subsidy on housing schemes will be revised every 10 years after 1927, instead of being finally fixed in that year. The new regulations also allow an extended period for the completion of schemes for slum clearance. These schemes must now be completed within six years or such further period as the Minister may allow, instead of within three years, as under the former regulations. Reasonable progress must, however, be shown within four years.

Cement Concrete Building Blocks.

The following specification for cement concrete building blocks of various thicknesses has been approved by the Standardisation and Construction Committee of the Ministry of Health :—

Cement.—The cement is to be Portland, of slow setting quality, and is to comply with the requirements of the current specification of the British Engineering Standards Committee.

Ballast Aggregates.—The aggregates for blocks for outside walling, unless made of waterproofed clinker, are to be granite, hard stone, or gravel broken to various sizes and with sufficient clean sharp sand to fill up interstices. The aggregate for blocks 4 in. thick shall pass a ¾-in. square mesh. The aggregate for blocks 3 in. thick shall pass a ½-in. square mesh. The aggregate for blocks 2½ in. thick shall pass a ⅜in. square mesh. The aggregate for blocks 2 in. thick shall pass a ½-in. square mesh, and for concrete less than 2 in. thick shall pass a ⅜-in. square mesh.

Composition.—The concrete for blocks of various thicknesses is to be composed by measure as follows :—4-in. thick blocks, 6 of aggregate to 1 of cement ; 3-in. blocks, 5 to 1 ; 2½-in. blocks, 4 to 1 ; 2-in. and less, 4 to 1.

Frogs.—Blocks of ballast concrete may be made with frogs, the minimum thickness in a 4-in. block being 2¼ in., and in a 3-in. block 2 in.

Clinker.—The concrete for blocks made of clinker shall be composed as follows :—Three inches thick and upwards, 6 of clinker and sand to 1 of cement ; under 3 in. thick, 4 of clinker and sand to 1 of cement ; a proportion of sand, not less than 5 per cent. and not more than 10 per cent., should be added.

Composition.—The clinker must be dense, vitreous, free from organic and combustible matter, and crushed to pass a ¼-in. square mesh. All clinker to be well washed and screened.

Sizes.—Blocks made of clinker concrete should not exceed 18 in. by 9 in. for 4-in. and 3-in. thicknesses, and 24 in. by 9 in. for 2½-in. and 2-in. thicknesses.

Waterproof Face.—Blocks made of clinker concrete, if used for external work, shall have all faces and edges exposed on the outer face of the wall cast weathertight with a waterproofing composition.

Mixing.—All materials are to be accurately measured. The aggregate and the cement are to be mixed together dry until the mass is uniformly coloured with the cement.

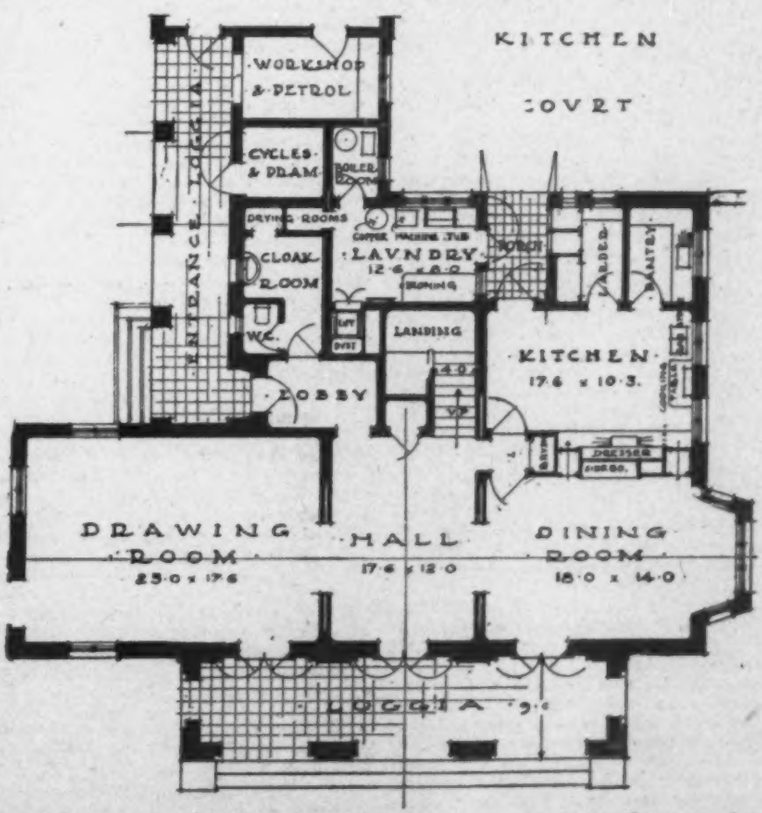
Water.—Sufficient water is to be used during the process of manufacture to ensure the thorough setting of the cement throughout the entire thickness of the block.

Age.—No blocks are to be used for building until they have been properly matured.

External Walls.—All external walls must be built with two thicknesses of blocks tied together, with a cavity between of not less than two inches. All blocks to be made of their full thickness in one operation.—*Housing.*

The Labour-Saving House.

We illustrate on this page the third premiated design in the *Daily Mail* labour-saving house competition, by Mr. E. W. Armstrong, of the Architectural Association, 35, Bedford-square, W.C. 1. The designs placed first and second were given in our last issue. Mr. Armstrong points out that the chief object in his design was to provide a house which could be managed in comfort by one person. In planning, every room was considered separately and in relation to the other rooms. The kitchen and offices have been arranged to coincide with the sequence of the daily routine of kitchen work. The gas stove is placed close to the scullery. All the meals are prepared on a marble slab cooking table and passed into the dining-room through a hatch. A shaft in the corner of the laundry serves the purpose of a soiled linen chute from the floor above.



Third Prize. Ground Floor. See how the accommodation for perambulators, cycles, and wet clothes has been arranged.

By permission of the *Daily Mail*.

Labour-Saving House Competition.

Third premiated design, by MR. E. W. ARMSTRONG.

THE CONCRETE INSTITUTE.

ELLIPTICAL VAULTING IN CONTEMPORARY ARCHITECTURE.

At the last meeting of the Concrete Institute, Mr. Maurice S. R. Adams, A.R.I.B.A., read a paper on "The Use of Elliptical Vaulting as a Primary Factor in Contemporary Architecture." In some prefatory remarks, Mr. Adams expressed the opinion that no architecture ever was or ever would be beautiful which had not the elements of nature within its conception. That theory cut at the root of modern practice and of that method of design which treated of architectural expression as surface decoration only, without reference to the construction. Features such as columns, porticoes and pediments, whose forms originated in structural necessity, were now commonly employed as mere ornament. He maintained, however, that architectural forms must be evolved from the construction, which they were bound to express. Concrete, as developed by modern science, he conceived as being the finest structural building material the world had so far produced. Its chief advantages were adaptability, great strength, durability and monolithic character. The age of concrete building had not yet begun, and he foresaw great possibilities for a future style of architecture, when the real characteristics of concrete were realised and the true principles of architecture were revived.

Dealing with the special subject of the paper, Mr. Adams said that the culminating point in all systems of construction and styles of architecture was the problem of roofing. One of the questions the designer must bear continually in mind was how the roof would affect the plan. Even where the roofs were flat, the problem was not so simple as might at first be imagined, because when spans exceeded more than moderate size it was necessary to introduce secondary beams or girders; and these resulted in the application of concentrated loads at fixed points, instead of being evenly distributed over the walls. Such loads, augmented from floor to floor, must necessarily have considerable influence on the plan, and must be carefully considered at the outset.

An advantage of semi-elliptical vaulting was that the vaults might spring immediately from the floor level instead of being superimposed at a higher level upon walls or piers, as in Gothic architecture. Thus all thrust was absorbed at the ground level and no system of buttressing was required—a feature to which the remarkable stability of elliptical vaults was partly due. Further, the vault or roof being thus self-supporting all structural or weight-bearing walls were eliminated from the building. The gable walls closing the ends of the vaults were, in effect, panels rather than walls, and consequently their thickness might be reduced to that of a partition. He had built gable walls to cottages only 4½ in. thick; but from the fact of their being tied in by the concrete vault they possessed remarkable strength, and the result was more permanent than a brick wall of twice the thickness as used in ordinary construction. Buildings roofed with elliptical vaults were in reality all roof. A form of construction was immensely strong by which a building consisted of a series of bays or compartments of semi-elliptical vaults rising from the floor level; and for the amount of material employed, it was probably stronger than any other form.

The remarkable stability of vault construction, whether of stone or concrete, lay in the fact that the vault substance was built, not vertical, but falling, and consequently the direction of gravity could not be changed by any slight settlement in the foundation. The very weight of the material used served to increase the vault's strength. Within the limits of compressional strength, a vault might be uniformly loaded to any desired extent. The loaded vaults would actually be stronger than the unloaded vaults. With beam construction, in which tensional strength was strictly limited within a comparatively small margin of safety, any surplus overloading at once reduced strength, and placed stability in danger.

The extraordinary strength and durability of Gothic vaulting were due to these facts. A simple cross vault consisted of four arched compartments, each of which tended to topple inwards. The four compartments exactly counterbalanced each other, resulting in great constructional strength compared with the amount and weight of material employed. Any tendency to spread in one compartment was exactly counter-balanced by the same tendency in the adjoining compartment. The first point in favour of semi-elliptical vaulting was that greater strength was produced with less material than was possible with any other form of construction. He included as semi-elliptical all curves approximating to this form, such as parabolic and pseudo-elliptical curves.

It was desirable with all forms of roofing that the loads thereon should be supported at as few points as possible, that the plan might not be unduly interfered with. With cross vaulting, the results in this respect were at least equal—and in some cases superior—to steel beam construction, since the floor space was entirely unrestricted, save at the four corners of each bay. By means of reinforced concrete, the bays might be of any size desired.

Architectural expression might be divided into two classes—constructional forms, and ornament or decoration. Nothing must be intentionally disguised or falsely expressed. Nothing could be less productive of good results than the practice of introducing structural features into a composition purely for so-called purposes of design. The introduction of large columns into a façade where they had no structural purpose was without artistic authority. If our imagination was so limited that in our designs we had to resort to what virtually amounted to pattern making, then let us give up the pretence of being architects—for no real architecture ever was or would be evolved by this method. In recent years, a strange and wholly illogical doctrine had arisen, which taught that design had nothing in common with construction, and that the best architects were those who most successfully disguised modern steel frame construction with applied architectural forms. Modern construction, we were told, must necessarily be very ugly if left to express itself naturally. Put quite bluntly, architecture had become almost a lost art, and only a small proportion of modern building deserved to rank as architecture. Theatrical scenery, whether executed in paint or stone, was not architecture, and we would never have a real style of modern architecture until this truth was properly grasped.

Architectural design, as he understood it, consisted in adjusting the several parts and the construction of a building so that the proportion or relation of parts in point of size produced an effect of harmony and unity. Unity of composition was produced by a definite ratio of parts, because of the common element thus introduced between features otherwise having little or nothing in common. Unity of idea was essential in architecture, because it was found in nature. A leading thought should run through an entire structure. An architect must have a clear conception of his ideas before he could hope for success as a designer.

In our schools of architecture, in order to assist the students in their study of the principal styles, they were encouraged to prepare designs for modern subjects having the outward form of the leading periods. It was not uncommon for a student to go through the whole age of architecture in this manner, commencing with the Greek and finishing up with a design in the most approved Tudor style. To his mind, this method of instruction was fundamentally wrong, and opposed to the true principles of architecture. Effect was studied without proper regard as to cause of effect. The causes from which many architectural features sprung had now ceased to exist, and their present introduction was therefore meaningless. Rather should present causes and conditions be considered and allowed to find full architectural expression just as earlier causes and conditions found expression, and therefore determined the nature and manner of earlier types of architecture. The designer having determined the several proportions of his building, would be free to ornament, enrich and humanise it by applied ornament. Works of architecture should be designed from the inside and not from the outside. The internal form of a building would be determined by practical considerations and structural necessity. The outside of a building might be left to take care of itself, when it would express quite naturally the form of the interior and true shape of the building.

With former methods of construction, only three pure styles of architecture were possible, namely, the Greek or horizontal style; the Gothic or vertical style; and the Byzantine or square style. With new methods of monolithic construction in reinforced concrete, three new and pure types of design became possible. We could at first do no more than start on the same principles from which all the great styles were evolved. If we did what we at least conceived to be right, we need not fear criticism in an age when the very principles of art were so little understood. The public did not like anything strange; but with familiarity it was ready to approve to-day that which yesterday was condemned.

Mr. Adams illustrated with lantern slides some designs and buildings being constructed with roofs of semi-elliptical reinforced concrete vaults, including a war memorial church, parish hall, factory buildings, and bungalows. A bungalow erected on this principle at Ruislip is straw thatched over the concrete vaulting. The roof is constructed of self-centering metal reinforcement attached to steel diagonal ribs. The gable walls or panels, which close the ends of the vaults, are of hollow concrete blocks trimmed in execution to a wooden guide. All foundations were omitted—a concrete raft only being placed over the site. The bedrooms are fitted with gas fires, and the flues carried up in the partitions to a brick stack. At the lower portion of the vaults, where some form of external shuttering would be necessary to keep the moist concrete in position, a casing of 2 in. concrete slabs were built up in place of shuttering, and this method proved quite satisfactory.

Replying to some of the points raised in the discussion which followed the reading of the paper, Mr. Adams, speaking of the strength of domical concrete, said that Sir Thomas Jackson had been called upon to report to the Russian Government with regard to some of the domes in that country, and had found a vast number of the domes more or less damaged by earthquake. Many of these had been standing for centuries without part of their supports; and they were so enormously strong that they were able to stand without some of their legs. Throughout the war, the experience of the Royal Artillery and other branches of the Service had been that concrete buildings stood the shock of gun-fire far better than anything else. It would be a hard thing to knock a hole in one of the vaults that Mr. Adams had constructed. One of the objections to this method of construction was that the building could not be altered once it was erected.

Slaters and Tilers in the London District.

The London Association of Slate Merchants and Master Slaters and Tilers has signed a working-rule agreement with the Amalgamated Slaters' and Tilers' Provident Society to stand for four months, starting from January 1, 1920. This includes 1d. per hour advance in wages, making the slaters' and tilers' recognised rate for the London district 1s. 11½d per hour for a 44-hour week, plus travelling time and workmen's fares.

THE BUILDING TRADE.

RAILWAY RATES AND BUILDING MATERIALS.

IN a survey of the effects of the increased railway charges which are to come into force on January 15, the *Times* estimates that the cost of a six-room house will be increased by from £38 to £44. Calculations made by the Scottish Board of Health during the construction of 100 small houses, showed that the average weight per house was 130 tons, of which bricks accounted for 53.50 tons; timber, 5.21 tons; cement, 7.76 tons; sand, 24.44 tons; and ballast, curbing, window sills, &c., 30.33 tons. In these small houses from 20,000 to 25,000 bricks are required, the weight of which varies from 2 to 2½ tons per thousand. The rate quoted last week for the carriage of Millbrook bricks to London (57 miles) was 3s. 10d. per ton, or 6s. 11d. per thousand. The new rate will be 10s. 4d. per thousand, or an increase of nearly £4 on the 25,000 bricks required for a small house. The present rate for the freight of timber per ton per 100 miles is 10s. 11d.; this will be increased by about 7s. 6d. per ton, or £2 on the timber required for one small house. The cost of other materials which have to be transported to the building site will cost more in proportion, although two of the biggest items, sand and ballast, are in the majority of cases obtained locally, and, therefore, the freightage by railway is eliminated.

THE INSTITUTE OF BUILDERS.

A MEETING of influential building trades employers of Manchester and surrounding districts was held at the Midland Hotel, Manchester, recently, under the chairmanship of Councillor Samuel Smethurst, J.P. (Oldham), Senior Vice-President of the Institute of Builders. The object of the meeting was to discuss matters appertaining to the Institute of Builders, the existence of which has, up to the present, been confined to London. In the provinces the Institute has been known only to those employers who have been brought into close contact with the work of the National Federation of Building Trades' Employers. Those attending had an opportunity of hearing an address upon the aims and objects of the Institute from the Chairman and other district members, and it was ultimately decided to form a branch thereof for the Manchester area.

Mr. Henry Matthews, J.P. (Manchester) and Mr. John M. Macfarlane (Manchester) were appointed President and Vice-president respectively, and Mr. James Denver, 10, South-parade, Manchester, was elected secretary; it was agreed that they should act as a committee in the first instance for organising a branch. The majority of employers in attendance intimated their willingness to join the Institute, and it is expected that a branch of the Builders' Institute will exist in the Manchester district at no distant date.

LABOUR IN THE BUILDING INDUSTRY.

IN an interview with a Press representative last week, Mr. E. J. Brown, of the London Master Builders' Association, expressed the opinion that if work on a large number of houses is proceeded with during the coming summer there will be a shortage of labour. A scheme for the insurance of building trade operatives against time lost in wet weather had been rejected by the Government, and contractors took the view that the insertion of "wet-weather clauses" by contractors would reduce contracts to speculations, as it would be impossible to estimate how many wet days would occur during the erection of a house. The matter was still under consideration by the Building Trades' Reset.lement Committee.

THE AMENDMENT OF THE INCREASE OF RENT ACT.

AT the time of going to press we have not been able to obtain the Act passed at the end of the Session to amend the Increase of Rent Acts, but from the notice issued by the Ministry of Health it appears that the provision as to alternative accommodation in the Act of 1919, Section 5 subs. 2, which applied only to persons who had purchased the house since September 30, 1917, is to be extended to all owners. That subsection was worded as though it contained a concession to house owners, because it overrode the provisions of the Act of 1918 which prevented a person who had bought a house after March 12, 1918, from claiming possession of the house even for his own occupation or for some person in his employ or in the employ of some tenant of his.

Section 5, subs. 2 of the Act of 1919 is as follows: "Where a person who has since the 30th day of September, 1917, purchased a house to which the principal Act, either as originally enacted or as extended by this Act, applies, requires the house for his own occupation or that of some person in his employ or in the employ of some tenant from him, nothing in the Increase of Rent, &c., Amendment Act, 1918, shall be construed as preventing the Court from making an order for the recovery of possession of the house if, after considering all the circumstances of the case, including especially the alternative accommodation available for the tenant, the Court considers it reasonable to make such an order." If this provision as to the Court being satisfied as to alternative accommodation being available is extended to all owners, as the circular states, then what was intended to be a concession to a particular class otherwise prevented from recovering possession of their own houses for their own occupation or the occupation of someone in their employ, &c., *i.e.*, persons who had purchased since March, 1918, has by this last new Act been converted into another and burdensome condition imposed upon all owners of houses. Formerly relief would have been given if the Court was satisfied that the owner reasonably required possession of the house for himself or one of the classes of persons specified in the Act, but now he will have to prove the existence of alternative accommodation, for the tenant is sure to allege that he can find no accommodation and the onus of proving that there is alternative accommodation will be placed upon the landlord.

It really seems extraordinary that Parliament should have failed to perceive how injuriously the Increase of Rent Acts affect the general question of housing and that a further provision should have been passed favouring the so-called rights of sitting tenants at the expense of the landlords who, in many cases, are far worse off than the tenants cherished by the law.

COMPANY REGISTRATION, JULY TO DECEMBER, 1919.

A STATEMENT compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C., shows that during the second half of the year 1919, there were registered 4,810 private companies, with a total capital of £122,648,034, and 604 public companies, with a total capital of £130,086,248. Among the private companies were 77 brick and cement manufacturing companies, with a total capital of £1,349,550; 126 building firms, capitalised at £1,133,950; 497 engineering companies, with a capital of £8,322,614; 105 furniture manufacturers, with a capital of £1,061,515; and 72 land companies, with a capital of £6,639,650. The public companies registered included 7 brick and cement manufacturers, with a capital of £342,000; 5 builders, with a capital of £1,025,400; 20 engineers, with a capital of £4,600,000; 7 furniture companies, with a capital of £1,181,700; and 12 land companies, with a capital of £1,448,500.

MOTOR TRANSPORT.

PROPOSALS for a network motor transport system to serve the whole of England and Wales were explained recently by Mr. A. G. Duncan, of the London Motor Transport Co., 26, Page-street, Westminster. He stated that he was trying to organise motor transport in a way that would give efficiency with service, and, eventually, economy. The idea is to divide England and Wales into 60 areas, each area comprising nearly 1,000 square miles. There would be 120 goods points, 25 miles apart on an average, made up of sidings, clearing houses, garage, and central repair depot. The buildings would each be on a standard plan. It is calculated that the scheme could be started with 2,000 lorries of 4 and 2 tons capacity. A continuous service would be run from 8 a.m. on Monday to 2 p.m. Saturday on an 8-hour system, giving a transit of goods on a basis similar to the railway companies' passenger-goods system before the war. The freights would be equal to those of the railways. It is expected that this system will abolish the wasteful returned empty carrier, arrangements being made to maintain a constant circulation of loaded wagons. Repair depots would be provided at points near enough to each other to make it impossible for a breakdown to occur far from one of them. The cost of the proposal is estimated at £6,000,000, and the promoters are desirous that the Government should assist by advocating the manufacture of standard vehicles in this country.

THE GATTIE TRANSPORT SYSTEM.

WE have received a memorandum from Mr. Roy Horniman with reference to the findings of the Departmental Committee of the Board of Trade which inquired into Mr. A. W. Gattie's proposals for central clearing stations for dealing with goods traffic. Mr. Horniman points out that in the evidence given before the Committee it was stated that, far from costing 300 million pounds, the cost of a London clearing house would be about 30 million pounds, and if the installation proved to be a failure much of this sum could be recovered by the sale of the land and materials. The passage in the Report which states that if the system is adopted it must be applied to the whole country, and that containers would have to be provided at every remaining goods station, is, states Mr. Horniman, the result of a misunderstanding of the evidence, in which, when Mr. Gattie used the word "entirety," he referred to one complete clearing house and not to the installation of clearing houses over the whole country. It is also pointed out that the Gattie scheme can deal with any class of goods, and therefore the statement in the Report, that there are no towns with the exception of London where 30,000 tons of goods "of a character which could be dealt with in a clearing house," does not apply.

The Trade Bureau for China.

The British China Trade Bureau (Publicity Bureau for South China) has been transferred to the Federation of British Industries. This Bureau is an organisation set on foot to provide a link between the home manufacturer and the distributing merchant and consuming population in China. The Bureau has in its possession a mass of valuable information relating to market conditions throughout the regions in which it operates.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers	Plasterers' Labourers.
Aberdare	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Accrington	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½-1/6½		
Altrincham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Ashton-under-Lyne	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Barnsley	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Barrow-in-Furness	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Barry	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Bath	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/4½	1/4½	1/4½
Bedford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Birkenhead	2/–‡	2/–‡	2/–‡	2/–‡	2/–‡	2/–‡	2/–‡	1/4½	1/4½	1/4½
Birmingham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Bishop Auckland	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Blackburn	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½-1/6½		
Blackpool	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½-1/6½		
Bolton	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Bournemouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½	1/2½	1/2½
Bradford	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/6½	1/8½	1/8½
Bridgwater	1/4½	1/4½	1/5½	1/4½	1/4½	1/4½	1/4½	1/2½	1/2½	1/2½
Brighton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Bristol	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Burnley	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½-1/6½		
Burton-on-Trent	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Bury	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Cambridge	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/5½	1/3½	1/3½	1/3½
Cardiff	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Chatham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Chelmsford	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/3½	1/1½	1/1½	1/1½
Cheltenham	1/6½	1/6½	1/6½	1/6½	1/6½	1/7½	1/6½	1/4½	1/4½	1/4½
Chester	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½ -1/6½		
Chesterfield	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Colchester	1/–	1/–	1/–	1/–	1/–	1/–	1/–	8d	8d	8d
Coventry	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Crewe	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/3½-1/3½		
Darlington	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Derby	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Doncaster	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Dudley	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Durham	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
East Glam. and Mon. Valleys	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Exeter	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/3½	1/3½	1/3½
Folkestone	1/–‡	1/3½	1/3½	1/–‡	1/3½	1/3½	1/3½	1/–‡	1/–‡	1/–‡
Gloucester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½‡	1/3½‡	1/3½‡
Grantham	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Grays	1/11½‡	1/11½‡	1/11½‡	1/11½‡	1/11½‡	2/–‡	1/10½‡	1/8½	1/8½	1/8½
Grimsby	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Great Yarmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/3½	1/2½	1/2½	1/2½
Guildford	1/6½	1/6½	1/6½	1/6½	1/6½	1/7½	1/5½	1/3½	1/3½	1/3½
Halifax	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Harrogate	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Hartlepools	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Hastings	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Hereford	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Huddersfield	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Hull	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Ipswich	1/3½	1/3½	1/3½	1/4½	1/4½	1/4½	1/2½	1/1½	1/1½	1/1½
Lancaster	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½-1/6½		
Leamington Spa	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Leeds	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Leicester	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Lincoln	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Liverpool	2/–‡	2/–‡	2/–‡	2/–‡	2/–‡	2/–‡	2/–‡	1/8½‡	1/8½‡	1/8½‡
Llanelly	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
London	1/11½‡	1/11½‡	1/11½‡	1/11½‡	—	2/0‡	1/10½‡	1/8½	1/8½	1/8½
Loughborough	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Luton	1/9½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Maidstone	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Manchester	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Mansfield	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Merthyr Tydfil	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Middlesbrough	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Newcastle-on-Tyne	1/9½	1/9½	1/9½	1/9½	1/9½	1/11½	1/9½	1/5½	1/5½	1/5½
Newport, Mon.	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Northampton	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Norwich	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/2½	1/2½	1/2½
Nottingham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Oldham	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Oxford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/4½	1/2½	1/2½	1/2½
Plymouth	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/5½	1/5½	1/5½
Pontypridd	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Portsmouth	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½	1/2½	1/2½
Preston	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½-1/6½		
Reading	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/5½	1/4½	1/4½	1/4½
Rochdale	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Rochester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Rugby	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
St. Albans	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/3½‡	1/3½‡	1/3½‡
St. Helen's	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Scarborough	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½‡	1/6½‡	1/6½‡
Sheffield	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Shrewsbury	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Southampton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/2½	1/2½	1/2½
Southend-on-Sea	1/7½‡	1/7½‡	1/7½‡	1/7½‡	1/7½‡	1/7½‡	1/6½‡	1/5½	1/5½	1/5½
Southport	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½-1/6½		
South Shields	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Stockport	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Stockton-on-Tees	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Stoke-on-Trent	1/8½	1/8½	1/8½	1/8½	1/8½	1/9½	1/8½	1/5½	1/5½	1/5½
Stroud	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/5½	1/3½	1/3½	1/3½
Sunderland	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/5½	1/5½	1/5½
Swansea	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½
Taunton	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/3½	1/3½	1/3½
Torquay	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/3½	1/3½	1/3½
Wakefield	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/8½	1/8½	1/8½
Walsall	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Warrington	1/8½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
West Bromwich	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/10½	1/8½	1/8½	1/8½
Wigan	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/11½	1/7½-1/7½		
Windsor	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
Wolverhampton	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/6½	1/6½	1/6½
Worcester	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/6½	1/4½	1/4½	1/4½
York	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/6½	1/6½	1/6½

The Masons' rate given is for bankers : fixers usually ½d. per hour extra. * War bonus of 2s. per week granted † War bonus of 3s. per week granted. ‡ War bonus of 2s. 6d. per week granted. ‡‡ War bonus of 5s. per week granted. ¶ War bonus of 7s. 6d. per week granted. § These rates include the 12½ per cent. bonus. [The above rates, unless otherwise shown, are exclusive of 12½ per cent. bonus.—ED.]

NOTES FROM THE FOREIGN PRESS.

CONCRETE COVERED RESERVOIRS.

THIS article deals with the design and construction of reinforced concrete covered reservoirs for water storage. Charts and formulæ are presented to enable engineers to rapidly estimate the costs and most economical design for required capacity, and also with a view to shortening the actual work of detailed design. Tables giving data and costs of various types and sizes of reservoirs are appended, and drawings of typical reservoirs and a bibliography of recent articles on the subject are given. In Great Britain and on the Continent covered reservoirs are generally built of brick or stone, but in America the introduction of covered reservoirs coincided with the beginning of the concrete era, so that concrete is the chief material used for this purpose in America. The larger structures have been made with gravity or semi-gravity walls, groined arch roofs, inverted groined arch floors and little or no reinforced concrete. The present trend appears to be towards the latter type. They are generally rectangular or circular, and when the required capacity has been fixed, the most economical combination of size and depth must be determined, subject to controlling local conditions. The depth of the reservoir must be at least greater than the depth of the water below the level of the overflow by the head required to discharge the maximum inflow through the overflow. The clearance is usually made greater. With proper vents and an adequate overflow, there will be no possibility of damage to the roof through rising water or through atmospheric pressure with falling water. Damage to the roof beams through alternate wetting and drying will not differ from damage to the walls, which in any case must be subject to this action. Attempts have been made to find the economical depth analytically, but without success. The author deals very fully with the subject, the text being amplified with twenty section drawings, and numerous formulæ and charts. The first set of graphs gives the cubic ft. of concrete and lbs. of steel per foot of wall for depths from 10 to 22 ft., the second gives quantities for flat slabs only, but is approximately correct for slab and beam roofs, the third gives the safe capacity of square and round columns, and the fourth gives the quantities of steel and concrete for square base footings for various column loads and soil bearing capacities. A covered reservoir is a comparatively simple structure, the best spacing of the columns being subject to no limitations. Two and a half feet of fill over the roof is considered sufficient, but 5 ft. is used on the Rocky Mountains owing to the great cold there. Fifty pounds per sq. ft. live load in addition to the weight of the fill on the roof is ordinarily ample. A roof designed for a total load of 300 lbs. per sq. ft. exclusive of the weight of the slab, should withstand the most severe loads which occur, usually those caused in laying the fill during construction. The maximum probable earth pressure should be considered as acting when the reservoir is empty, but when it is full it is best to assume that the internal hydrostatic pressure is resisted by earth pressure from dry material having the lowest conceivable angle of repose. As shrinkage cracks may occur between the wall and the back fill, the resisting pressure of the earth with a full reservoir should be omitted to a point about 5 ft. below the surface with normal soils. In ordinary dry soils, the floor is regarded as a pavement, but in wet soils the reservoir must be considered as a floating unit, and the floor heavily reinforced to withstand the upward thrust. Check valves opening inwards have been used to reduce this upward pressure, but these are not permissible where the ground water is unsafe for use. (R. D. L. French, *Journal of Engineering Institute of Canada*).—From the *Technical Review*.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

BOLTON.—Plans approved by T.C.: Mr. J. Ashurst, cinema theatre, Moss-street; Deane-road Cinema Co., cinema theatre in Deane-road and Quebec-street; Bolton Cinema Co., cinema theatre, St. Helen's-road; Mr. J. Markland, boundary wall, Darley-street; Mr. J. Simms, workshop, off Hawthorn-road; Mr. John Hayhurst, re-erection of shed, Hobart-street; Crosses & Winkworth, extension to shed, Glinow Mill; Mr. Openshaw, extension to shop, 75, Bradshaw-gate; Mr. O. Pennington, motor shed, 2, Tong-street; Parish Church School, exit stairs, Paley-street; Messrs. Slater, addition to bleach works, Slater-lane; Thos. Taylor & Sons, Ltd., extension to gassing room, Grecian Mill; Mr. J. P. Ellison, storeroom, &c., 60, Folds-road; William Townson & Sons, Ltd., garage, Hatfield-road; Mr. G. Jackson, wooden shops Stewart-street; Mr. F. C. Jones, motor shed, 183, Chorley New-road; T. Pemberton & Son, motor shed, Crumpsall-street; Greenhalgh & Shaw, Ltd., extensions, Halliwell Mills.

BO'NESS.—The Scottish Board of Health has intimated approval of lay-out and type plans of Bo'ness housing scheme, the first part of which provides for the erection of fifty houses of three, four and five apartments. Negotiations are in progress for the acquisition of suitable sites at Cadzow-crescent, overlooking the Firth of Forth.

COLNE.—Plans passed: Additions, 8, Keighley-road, for Mr. W. Smith.

COVENTRY.—Plans passed by T.C.:—Printing works, Quinton-road, for Iliffe & Sons, Ltd.; garage, Hearsall-lane, for Mr. A. Holland; alterations and additions, Cox-street, for Ind, Coope & Co., Ltd.; alterations to No. 50, Cross Cheaping, for Freeman, Hardy & Willis Ltd.; stamping shop and die stores, Ribbie-road, for Thos. Smith's Stamping Works, Ltd.; spirit storage, filling shed, workshop, &c., Webster's Wharf, Stoney Stanton-road, for the Gas Lighting Improvement Co., Ltd.; extension of works, corner of Holyhead-road, and Waveley-road, for T. G. John, Ltd.; office, Haresfield-road, for the Marcel Engineering Co., Ltd.; workshop, St. Paul's-road, for W. J. & J. Isaac; garage, Awson-street, for Cotton Bros.; mess-room, Far Gosford-street, for the Coventry Motor Fittings Co., Ltd.; covering roadway and passage, Spon End, for the Coventry Chain Co., Ltd.; conversion of Witton Lodge, Stoke Green, into two houses, for H. L. Wilson; blower-house, boiler-house, &c., for Edgewick Works, Canal-road, for Alfred Herbert, Ltd.; garage, Station-street East, for Wm. Lole; two houses and stables, Wyley-road, for J. Mears; offices, London-road, for the Lawton Tube Co.; store sheds, Godiva-street, for G. H. Tysoe & Sons; workshop, Queen Mary's-road, for H. Veasey; two houses, Holmfield-road, for A. Jervis; petrol store, "Dalhousie," Dalton-road, for O. Harmer; alterations and additions, 21, Allesley Old-road, for H. Mander; motor garage, "The Mount," Davenport-road, for C. E. York; alterations to premises, No. 46, Warwick Lane, for W. H. Smith & Son; garage, Broad-street, for Wm. Bennett; offices, stores, &c., Shackleton-road, for the Aircraft and Motor Engineering Co.; canteen, Cox-street, for the Coventry Brace Co.

DORCHESTER.—The Justices have approved of the plans prepared by Mr. F. T. Maltby, architect, for alterations to the Plume of Feathers Hotel, for Messrs. John Groves & Co., of Weymouth.

DUDLEY.—Plans passed: Messrs. Chilton Bros., extensions to factory, Queen's Cross, Dudley; Mr. E. R. Hollies, additions, 25, Church-road, Netherton; Messrs. T. W. Crook & Sons, motor garage at Brook-street; Messrs. J. Smillie, Ltd., additions to works, Oxford-street; Messrs. T. Plant & Co., additions, Britannia Inn, Northfield-road, Netherton; Mr. W. G. Moore, alterations, Temperance Institute and Cafe, High-street; Mr. A. E. Westley, garage, Castle Hotel, Castle-street; Messrs. Preece & Co., alterations to warehouse, High-street; Messrs. Dudley Knitting and Wool Co., new shop front and alterations, 224, Wolverhampton-street; Dudley Corporation, 54 dwelling-houses at Red-hill; and 70 dwelling houses at Northfield-road.

EDINBURGH.—The Housing and Town-Planning Committee have considered estimates, for a further 82 houses at Gorgie, amounting to £40,000, and approved them subject to the arrangement of certain details in conjunction with the Scottish Board of Health. A lay-out plan for an additional 160 houses, on Chesser-avenue, the new road off Chesser-avenue, and Slateford-road, submitted by the City Architect (Mr. Williamson) has been approved.

LEES.—The U.D.C. is considering a scheme for the erection of 150 houses.

LEWES.—At the petty sessions, plans of proposed alterations at the "Sand Rock" Inn, Ditchling, the "Swan" Inn, Lewes, and the "King's Arms," Lewes, have been approved.

NORTHAMPTON.—Plans passed: Dwelling-house and garage, Woodland-avenue, for Mr. H. Buswell; alteration to premises, Rickard-street, for Mr. Lees; building for St. Mathew's Church, Church-avenue, Phippsville, for Mr. P. Phipps; new premises, builders' yard, Roe-road, for Mr. G. Heap; alterations, Mayorhold, for Messrs. W. Wren & Co.; factory, Ardington-road and Christchurch-road, for the Co-operative Wholesale Society; workroom, Abington-avenue, for Mr. J. A. Butlin; alterations to premises, Abington-street, for the Northampton Co-operative Society.

OLDBURY.—It is proposed to renovate the parish church, at an estimated cost of £1,500.

SOUTH SHIELDS.—Plans passed by T.C.: Mr. Howard Hill, for Mr. Frank Lake, alterations, 6, Victoria-terrace; Mr. P. A. B. Leith, for Smiths Dock Co., Ltd., extension of crossing to engine works gateway, Corstorphine Town; Watson & Scott, for Scandinavian Sailors' Mission (Louis Zollner), alterations and additions to Dean House, Tyne Dock; Mr. J. H. Morton, for Jameson & Foster, Joiners' Shop, Station-road; Mr. Henry Chapman, for J. W. Pratt, Ltd., alterations to Bottling Stores, Dean-road; Mr. R. Gracey, for Jebb Bros., Ltd., Marine Stores, Salmon's-quay; Mr. J. H. Morton, for Ald. R. Readhead, dwelling-house, at corner of Westoe Village and Village-terrace; Mr. F. W. Newby, for Messrs. Jas. Teasdale & Co., Ltd., garage, &c., Imeary-street; Messrs. Chas. Rennoldson & Co., Ltd., garage, Time office, waiting-room, and street diversion at Lawe Shipyard, Readhead's Landing and Pilot-street.

SOWERBY BRIDGE.—The Housing Commissioner has approved plans submitted by the Council for a housing scheme at Albert-road. The scheme provides for the erection of 101 working-class dwellings, and the lowest official estimate for carrying out the proposed scheme is well over £70,000.

WAKEFIELD.—The Corporation have four housing schemes on hand, by which they hope to provide about 1,500 of the 2,000 houses estimated to be required. Building is in progress on the Elm Tree-street site, and it is hoped that the sixty-four houses will be ready for occupation in the early spring. The building of forty-six houses at Alverthorpe will be commenced shortly, and the provisional approval of the Housing Commissioner is expected for the lay-out plans for 489 houses at Portobello. The scheme for the development of the Thornes House estate provides for the erection of about 900 houses, and the setting aside of twenty acres for a girls' secondary school.

WALTHAMSTOW.—Plans passed: The London Electric Wire Co. & Smiths, Ltd., lavatory at Wire Works, Church-road; Underwood Manufacturing Co., Warehouse at Lindley-road; Messrs. Jennings & Smith, motor garage, the Limes, Poppleton-road; L.U.D.C. Electricity Department, workshop, Power Station, Cathall-road; Mr. H. Bond, motor house, 404 Lea Bridge-road; Messrs. J. Moreland & Sons, Ltd., workshop and glass furnace at 26-28, Grange-road.

WESTMINSTER.—Mr. H. V. Corbett has prepared plans for a commercial sales building adjacent to Australia House, in the Strand.

YORK.—Plans passed by T.C.: Ware-house, Lime-street, Hungate, for R. A. Wright's Exors.; offices, Haxby-road, for Messrs. Rowntree & Co.; alterations and additions, Lowther-street, for the York Co-operative Society, Ltd.; shed, George-street, for the Tadcaster Tower Brewery Co.; extensions, 2, Gladstone-street, for Mr. C. Swaley.

* See also our List of Competitions, Contracts, &c.

FIRES.

BARKING.—The buildings on Manor Farm, the property of Mr. G. Isles, were destroyed by fire on Christmas Day.

KILMARNOCK.—An outbreak of fire has occurred in the premises of Messrs. Rankin & Forbes, jewellers, King-street. The damage is estimated at over £1,000.

PERTH.—At Feechney Industrial School, an outbreak of fire occurred last week. The damage is estimated at from £1,000 to £2,000.

PATENTS.

APPLICATIONS PUBLISHED.*

122,394.—G. Motta: Hollow panels or slabs for the construction of walls and roofs.

135,565.—J. H. Lynn: Portable benches.

135,568.—J. C. Hansen-Ellehammer; Windmills.

135,579.—J. C. Grant: Casting in Portland cement and like materials.

135,580.—J. C. Grant: Casting in Portland cement and like materials.

135,606.—H. B. Jackson: Water boilers.

135,637.—A. Gadie: Concrete or like building-slab walls.

135,638.—J. M. Arnell: Radiators for heating buildings.

135,683.—E. Jones: Step ladders.

135,688.—E. B. Jarvis.—Concrete and structural steel construction.

135,721.—W. O. Pearce: Construction of concrete slab buildings.

135,740.—A. Hardoncourt: Bricks or blocks for building double walls.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

NEW INVENTIONS.

We have received from Mr. W. Doncetter (235, Kennington Park road, S.E. 1), some samples of concrete made with 70 per cent. sawdust and 30 per cent. Portland cement. The inventor claims that the material is suitable for slabs for floors, ceilings, walls, &c.; can be run similarly to concrete made with ordinary aggregates; and can be made with a fine face with ornamental design for panelled wainscotting, taking paint or other finish without further preparation. It is also stated to be fire-proof and waterproof, capable of being cut with a hand-saw and planed and fitted, and nails can be driven into it. The cost of a slab, 12 in. × 12 in. × 1 in., works out at 2½d.

The "Three-ese" Recorder.

The "Three-ese" recorder, which has been placed on the market as an attempt to solve the difficulty of keeping a check on the movements of builders' and contractors' plant and machinery, is constructed in the form of a cabinet with a glazed top opening upwards, and a succession of sliding drawers in the face enclosed by a pair of doors. The top compartment contains records of stock lying at works or depot, and the vertical slides in the face represent the different jobs being carried on. Upon sending goods from works or depot to a job, the indicator is transferred from the top compartment to the particular slide in the face allocated to represent the job. Single items are written on labels, which are fixed on small movable plates, numerical items, lineal feet, and weights being described on a succession of small dials, vertical and flat. The difficulty of fixing labels and writing upon them is overcome by an attachment constructed in hard wood. An abstract of the items is always visible through the glass at the top. A booklet has been published illustrating the different types and prices of the recorder, and will be forwarded upon application to Messrs. Morgan & Co., 127, Long Acre, W.C., where samples can be seen.

WAGES ARBITRATION AWARDS.

Peterborough.

The Industrial Court, Westminster, held an inquiry on Monday into the case between the Operative Bricklayers' Society and H.M. Office of Works and H. Arnold & Son, regarding the payment for "walking time" at Peterborough. The operatives claimed that for the purpose of Rule 7 of the Working Rules agreed upon between the Peterborough and District Building Trades' Employers' Association and the National Federation of the Building Trades' Operatives, the Labour Exchange where the men were engaged served as the local yard or shop from which the men were sent to the job, and that they were, therefore, entitled to the payment for "walking time." The employers contended that although the men were supplied through the local Labour Exchange, they were actually engaged on the job. The Court decided that the claim was not established.

Marlborough.

An inquiry was also held to consider the case between the National Federation of Building Trades' Operatives and firms of builders at Marlborough. The terms of reference were to determine the prescribed rates of wages for various tradesmen and labourers at Marlborough and, if such rates existed, to substitute the following:—Tradesmen, 1s. 5d. per hour; painters, 1s. 4d.; labourers, 1s. 2½d. The Court decided that the prescribed rates were:—Tradesmen, 8d. per hour; painters, 7½d.; labourers, 6d.; and that for these rates the following be substituted:—Tradesmen, 1s. 3d. per hour; painters, 1s. 2d.; labourers, 1s.; to take effect from the first pay-day after January 5, 1920.

COMPETITIONS, CONTRACTS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts iv: Competitions iv; Public Appointments xlvi; Sales by Auction lii. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

BUILDING AND PAINTING.

JANUARY 9.—**Enniskillen.**—STORES.—The United Co-operative Baking Society invite tenders for the erection of flour stores and bakery. Quantities of Mr. J. Donnelly, architect, Enniskillen.

JANUARY 9.—**Henley-on-Thames.**—The Commissioners of H.M.O.W. invite tenders for the erection of a new head post-office at Henley-on-Thames.

JANUARY 9.—**London.**—The Commissioners of H.M.O.W. invite tenders for the extension of the Sorting Office at Walthamstow, E.

JANUARY 9.—**London.**—The Commissioners of H.M.O.W. invite tenders for the extension of the Telephone Exchange at Tottenham, N.

JANUARY 9.—**Ongar.**—HOUSES.—The R.D.C. invite tenders for the erection of seventeen houses in the Chase, at Marden Ash, Ongar. Quantities of the Surveyor of the Council, The Council House, Chipping Ongar. Deposit, £2 2s.

JANUARY 9.—**Wigton.**—HOUSES.—The U.D.C. invite tenders for the erection of twelve houses (six pairs) as first portion of the scheme. Quantities of the Architect, Mr. John J. Davison, 6, King-street, Wigton. Deposit £3 3s.

JANUARY 10.—**Chippenham.**—HOUSES.—The T.C. invite tenders for the erection of a block of four and a pair of cottages. Quantities from Mr. A. E. Adams, Borough Surveyor, Chippenham, Wilts. Deposit £1 1s.

JANUARY 10.—**Congleton.**—COTTAGES.—The Housing Committee invite tenders for the erection of fifteen cottages, on the Bromley-lane site. Quantities from Mr. J. H. Walters, borough surveyor, Town Hall, Congleton. Deposit £3.

JANUARY 10.—**Droitwich.**—HOUSES.—The Council invite tenders for the erection of twelve Class A houses in the Holloway, Droitwich. Quantities of Mr. Hy. Hulse, borough surveyor, 105, Friar-street, Droitwich. Deposit £2 2s.

JANUARY 10.—**Horbury.**—ARCHES.—The County Council of the West Riding of Yorkshire invite tenders for the rebuilding of two arches at Horbury Bridge, over the River Calder. Particulars of Mr. F. G. Carpenter, West Riding Surveyor, County Hall, Wakefield.

JANUARY 10.—**Salford.**—SANATORIUM.—The Corporation invite tenders for the erection of a sanatorium at Nab Top, Marple. Quantities of the architect, Mr. John Cubbon, F.R.I.B.A., 42, John Dalton-street, Manchester. Deposit £2 2s.

JANUARY 12.—**Conway.**—The Corporation of Conway invite tenders for the erection of houses in connection with their housing schemes A and C.

JANUARY 12.—**Hoylake.**—PAINTING.—The U.D.C. invite tenders for painting ironwork of the railway bridge over the Park. Specifications of the Surveyor, Town Hall, Hoylake.

JANUARY 12.—**Portsmouth.**—ADDITIONS.—The Corporation invite tenders for making additions to wind screens at the South Parade Pier. Specifications of the Borough Engineer, Portsmouth.

JANUARY 12.—**Woolwich.**—HOUSES.—The B.C. invite tenders for the erection of 77 houses at Eltham. Names to Messrs. J. S. Gibson & Maxwell Ayrton, 5, Old Broad-street, London.

JANUARY 13.—**Forest Gate.**—EXTENSION.—The Commissioners of His Majesty's Works invite tenders for the extension of the Post Office and Sorting Office at Forest Gate, E. Quantities from the Director of Contracts, H.M. Office of Works, Storey's Gate, Westminster, S.W. Deposit £1 1s.

JANUARY 13.—**Ilkeston.**—The Commissioners of H.M.O.W. invite tenders for the erection of a new Post Office at Ilkeston.

JANUARY 13.—**Llanelly.**—HOUSES, ROADS AND SEWERS.—The R.D.C. invite tenders for the construction of roads and sewers in connection with the erection of 36 houses at Tal y Clun, Llangennech, and the erection of 44 houses and the construction of roads and sewers at Llech y Fedach, Tumble. Quantities of the architects, Messrs. W. Griffiths & Son, Falcon Chambers, Llanelly. Deposit £2 2s.

JANUARY 13.—**Maldon.**—PAINTING.—The Board of Guardians invite tenders for repairs and decorations of a portion of the Board Room Block of the Poor Law Institution, Spital-road, Maldon. Specification of the Surveyor, 6, Market-hill, Maldon.

JANUARY 13.—**Uxbridge.**—The U.D.C. invite tenders for the erection of 21 pairs of working-class dwellings and for forming new road and sewers on site, George-street and Montague-road, Uxbridge, Middlesex.

JANUARY 14.—**Ashby-de-la-Zouch.**—HOUSES AND ROADS.—The Council invite tenders for:—(1) The erection of sixty houses on Smisby-road site; (2) construction of roads and laying sewers. Quantities of the architects, Messrs. Baines & Provis, A.R.I.B.A. and M.S.A., 16, Friar-lane, Leicester. Deposit £2 2s.

JANUARY 14.—**Blore.**—HOUSES.—The Blore Heath R.D.C. invite tenders for the erection of 30 houses. Quantities of Mr. R. Matthews, Architect and Surveyor, Parrs' Bank Chambers, Nantwich. Deposit £2 2s.

JANUARY 14.—**Brighton.**—HOUSES.—The Corporation invite tenders for the erection in brick of 479 houses on the Moulescombe Estate. Quantities of the Borough Surveyor, Town Hall, Brighton. Deposit 10s. 6d.

JANUARY 14.—**London.**—Tenders are invited for extensive works of alteration, sanitary, heating, lighting (electric) culinary installations, lifts (electric) works of decoration, &c., of the Manchester Hotel, Aldersgate-street, London, E.C., for Messrs. R. E. Jones, Ltd.

JANUARY 14.—**Manchester.**—PAINTING.—The Guardians of the Manchester Union invite tenders for the decorating of the church, nurses' home, &c., at the Withington Institution, West Didsbury, Manchester. Specifications to Mrs. Firth, Matron, at the Institution.

JANUARY 14.—**Manchester.**—WASHHOUSE.—The Baths Committee invite tenders for a public washhouse at Levenshulme. Specification of the City Architect, Town Hall, Manchester. Deposit £1 1s.

JANUARY 14.—**Market Drayton.**—HOUSES.—The R.D.C. invite tenders for the erection of about 50 houses. Quantities of Mr. R. Matthews, Architect and Surveyor, Parrs Bank Chambers, Nantwich. Deposit £2 2s.

JANUARY 14.—**Shipley.**—HOUSES.—The U.D.C. invite tenders for the erection of 30 houses of three types—A, B, and B4—at Hirst Wood-road, Shipley. Quantities of the Architect, Council Offices, Somerset House, Shipley. Deposit £1 each trade, or £3 all trades.

JANUARY 15.—**Bramblestown.**—HOUSE.—Tenders are invited for the erection of a dwelling-house at Bramblestown, Gowran, Co. Kilkenny, for Mr. A. O'Donnell. Specification of Messrs. William H. Byrne & Son, architects, 20, Suffolk-street, Dublin.

JANUARY 15.—**Lambeth.**—The Metropolitan Borough of Lambeth Council invite tenders for the erection of some or all of 139 dwellings to be built on the Holderness House Estate, Knight's-hill, West Norwood.

JANUARY 15.—**Poplar.**—COTTAGES.—The Guardians Poplar invite tenders for the erection of four cottages at the Laindon Branch Workhouse, Essex. Quantities of the architect, Mr. W. Clarkson, 136, High-street, Poplar, E. Deposit £3 3s.

JANUARY 15.—**Whitefield.**—HOUSES.—The U.D.C. invite tenders for the construction of 16 houses at Elms-street. Quantities of the Council's Architect, Mr. George M. Denton, Council Offices, Whitefield. Deposit, £2 2s.

JANUARY 16.—**Bournemouth.**—HOUSES.—The T.C. invite tenders for the erection of the second instalment of 100 cottages under the housing schemes. Particulars of Mr. F. P. Dolamore, borough engineer, Municipal Buildings, Bournemouth.

JANUARY 16.—**Darlington.**—HOME.—The Committee invite tenders for the erection of the Church of England Waifs' and Strays' Home, Darlington. Quantities of Messrs. Joseph Potts & Son, Architects, 12, Eldon-square, Newcastle-on-Tyne. Deposit £2 2s.

JANUARY 16.—**Hemsworth.**—ADDITIONS.—The R.D.C. invite tenders for the erection of new dormitories at the Isolation Hospital, Brierley Common, near Hemsworth. Quantities of Mr. W. D. Lynam, A.M.I.C.E., Surveyor to the Council, Council Offices, Hemsworth. Deposit £1 1s.

JANUARY 16.—**Preston.**—BATHS.—The Corporation invite tenders for the erection of baths. Quantities of the Borough Surveyor, Town Hall, Preston. Deposit, £1 1s.

JANUARY 17.—**Beverley.**—HOUSES.—The Corporation invite tenders for the erection of 12 houses on the Grovehill-road site. Quantities of Mr. J. Willis Mills, Town Clerk, 31, Lairgate, Beverley. Deposit, £1.

JANUARY 19.—**Irvine.**—HOUSES.—The Town Council invite tenders for the separate trades required in the erection of 54 dwelling houses. Quantities from Mr. David Gillies, Town Clerk, Council Chambers, Irvine. Deposit £1 1s.

JANUARY 19.—**Sittingbourne.**—HOUSES.—The U.D.C. invite tenders for the erection of 50 houses in Bell-road, Sittingbourne. Quantities from Mr. G. H. Potter, Clerk, 76, High-street, Sittingbourne. Deposit £2 2s.

JANUARY 19.—**Swansea.**—HOUSES.—The R.D.C. invite tenders for the erection of the following groups of houses:—(1) Eighty houses in Dantwyn and Glynhir-roads, Pontardulais. (2) Thirty-four houses in Frampton and Alexandra-roads, Gorseinon. (3) Eighteen houses in Mount-street and Mansel-street, Gowerton. (4) Forty-eight houses in Culfor-road and Glebe-road, Loughor. (5) Twelve houses in Gorseinon-road, Penllergaer. (6) Fourteen houses in New-road, Grovesend. Quantities of Mr. Edward Harris, Clerk, £2 2s.

JANUARY 20.—**London.**—ALTERATIONS.—The Commissioners of His Majesty's Works invite tenders for alterations to the National Gallery, London. Quantities from the Director of Contracts, H.M. Office of Works, Storey's Gate, Westminster, S.W. Deposit, £1 1s.

*JANUARY 20.—**Marshland.**—HOUSES.—Marshland R.D.C. invite tenders for the erection of houses as follows: Two pairs at Lakesend; one pair at Nordelph.

JANUARY 20.—**Newcastle-on-Tyne.**—OFFICES.—The Commissioners of His Majesty's Works, etc., invite tenders for the erection of offices for the Ministry of Pensions, at Newcastle-on-Tyne. Quantities from the Director of Contracts, H.M. Office of Works, Storey's Gate, Westminster, S.W. Deposit £1 1s.

JANUARY 21.—**Ardwick-le-Street.**—HOUSES.—The U.D.C. invite tenders for the erection of 60 houses at Skellow. Particulars of Mr. G. Gledwill, Surveyor, Council Offices, Ardwick-le-Street. Deposit £5.

*JANUARY 21.—**Docking.**—The Docking R.D.C. invite tenders for the erection of six dwellings in the Parish of Ringstead, Norfolk.

JANUARY 21.—**Laurencekirk.**—HOUSES.—The T.C. invite tenders for the erection of 12 cottages and the necessary road making at Laurencekirk. Quantities of Messrs. D. & J. R. M'Millan, Architects, 105, Crown-street, Aberdeen.

*JANUARY 21.—**London.**—The Commissioners of H.M.O.W. invite tenders for the erection of a new Sorting Office, at West Wimbledon.

*JANUARY 21.—**London, S.E.**—The Metropolitan Asylums Board invite separate tenders for painting and repairs at (1) Woolwich Casual Ward, Plumstead, (2) Goddie Leigh Homes, Abbey Wood.

*JANUARY 21.—**London, S.W.**—The Council of the Metropolitan Borough of Chelsea invite tenders for the supply and execution of various articles and works.

JANUARY 21.—**Southwell.**—HOUSES.—The R.D.C. invite tenders for the erection of 20 houses at Southwell and 6 at Edwinstowe. Quantities from Messrs. Sands & Walker, Milton Chambers, Nottingham. Deposit £2 2s.

*JANUARY 21.—**Wisbech.**—HOUSES.—Wisbech R.D.C. invite tenders for the erection of four pairs of houses at Christchurch.

*JANUARY 23.—**Liverpool.**—The Commissioners of His Majesty's Works, Storey's-gate, Westminster, invite tenders for the erection of a new anthrax disinfecting factory, at Liverpool.

JANUARY 23.—**Newton-in-Makerfield.**—HOUSES.—The U.D.C. invite tenders for the erection of twelve houses (either in brick or concrete), at the South Meanes, Earlestown. Quantities of the Council's Architect, Market Chambers, Earlestown. Deposit £2 2s.

JANUARY 24.—**Newton Mearns.**—WAR MEMORIAL.—The Newton-Mearns War Funds Committee invite tenders for the supply of a Memorial, in silver grey or red granite. Designs, specifications and estimates, ranging from £300 to £500, to Mr. Alex. Garvie, Hon. Secretary, Pienploth, Newton-Mearns.

*JANUARY 25.—**Wrexham.**—The T.C. invite tenders for the erection of 116 houses and for the construction of sewers and roads.

*JANUARY 27.—**London.**—ALTERATIONS.—The Commissioners of His Majesty's Works, invite tenders for alterations to the Civil Service Commission, Burlington-gardens, London, W. Quantities from the Director of Contracts, H.M. Office of Works, Storey's Gate, Westminster, S.W. Deposit £1 1s.

*JANUARY 27.—**Malling.**—The Malling R.D.C. invite tenders for the erection of ten cottages at Birling, Kent.

*JANUARY 27.—**Nottingham.**—HOUSES.—The Housing Committee of the Corporation of Nottingham invite tenders for the erection of 182 houses on the Sherwood Site, Nottingham, to be let in seven contracts. A further 50 houses may be tendered for in single pairs or blocks of four houses, or larger quantities. The Committee will require the houses to be completed and handed over in instalments. Quantities of the architect, Mr. W. A. Kneller, 12, Victoria-street, Nottingham. Deposit £2 2s.

*JANUARY 27.—**West Ham.**—The West Ham B.C. invite tenders for the erection of proposed public baths at Silvertown.

*JANUARY 28.—**Ely.**—The Ely R.D.C. invite tenders for the erection of houses at various places.

*JANUARY 30.—**Prentwood.**—The Prentwood U.D.C. invite tenders for the erection and completion of 33 houses in their district.

*JANUARY 31.—**Chester.**—The Housing Committee of the Corporation of Chester invite tenders for the erection of 40 houses on the Buddicom Estate, Hough Green, Chester.

*FEBRUARY 2.—**Stroud (Gloucester).**—The Stroud U.D.C. invite tenders for the construction of certain roads, and sewers in connection with their housing scheme, in Folly-lane, Stroud.

*FEBRUARY 4.—**London, E.**—The Guardians of the Parish of Poplar Borough invite tenders for the erection of four cottages at the Laindon Branch Workhouse, Essex.

FEBRUARY 6.—**Oakengates.**—HOUSE AND STREET WORK.—The U.D.C. invite tenders for (a) the erection of 70 houses; (b) for street works, sewering, and water supply. Quantities of Mr. John F. Thorrold, Surveyor, Council Offices, Oakengates. Deposit £2 2s.

FEBRUARY 10.—**Shoreditch.**—PAINTING.—The B.C. invite tenders for painting and decorating works to the interior of swimming bath at Haggerston Baths, Mansfield-street, E.2. Specifications from Mr. T. L. Hustler, Borough Engineer, Town Hall, Old-street, E.C.3. Deposit £1 1s.

FEBRUARY 11.—**Various Places.**—PAINTING.—The Lancashire and Yorkshire Railway invite tenders for painting at the undermentioned places: (1) Aintree and Southport engine sheds (inside and outside); (2) Southport to Preston, &c.; (3) Mill Hill to Preston Junction; (4) Bamber Bridge to Lostock Hall and Preston E.L.; (5) Blackburn Passenger and Goods Station; (6) Bolton to Euxton Junction and Horwich Branch; (7) Pendleton to Crow Nest Junction; (8) Salford to Farnworth; (9) Farnworth to Bolton; (10) Bolton to Castleton; (11) Clifton Junction to Accrington; (12) Newton Heath C. and W. Works, &c., (13) Drylough Junction to Low Moor; (14) Low Moor (including engine shed) to Bradford; (15) Bradford Passenger and Goods Stations; (16) Ripponden and Stainland Branches and Dewsbury Junction C. and W. Shops; (17) Wakefield Passenger and Goods Stations and engine shed and Leeds engine shed; (18) Fleetwood Loco. Shed, &c., and Blackpool Enginemen's lodging-house. Specification at the Engineer's Office, Hunt's Bank, Manchester.

*NO DATE.—**Coventry.**—Estimates are required for houses at Earlsdon, Coventry.

FURNITURE, MATERIALS, etc.

JANUARY 9.—**Beverley.**—MATERIALS.—The East Riding of Yorkshire County Council invite tenders for the supply of broken Whinstone granite, tarred and untarred slag, tar for spraying and tar for grouting. Forms of tender of the County Surveyor, County Hall, Beverley.

JANUARY 10. — **Manchester.** — MATERIALS. — The Guardians of this Union invite tenders for the supply of the Crumpsall Institution, Crescent road, Manchester, of timber, painting materials, &c. Quantities of Mr. Hargreaves, Superintendent of Works, Union Offices, All Saints, Manchester.

JANUARY 11. — **Ruislip — Northwood.** — ROAD MATERIALS.—The U.D.C. invite tenders for 30,000 gallons of tar and for granite or limestone chippings. Particulars of Mr. E. R. Abbott, Clerk, Council Offices, Oaklands Gate, Northwood.

JANUARY 12.—**Canterbury.**—MATERIALS.—The T.C. invite tenders for road and other materials. Specification of Mr. A. C. Turley, City Surveyor, Municipal Offices, Canterbury.

JANUARY 12. — **Cowes.** — ROAD MATERIAL. — The U.D.C. invite tenders for the supply of 300 tons of 1½ in. granite and 100 tons of ¾ to ¼ in. chippings. Form of tender of Mr. J. W. Webster, Surveyor, Cowes, I. of W.

JANUARY 12.—**South Stoneham.**—GRANITE.—The R.D.C. invite tenders for the supply of British Macadam. Forms of the District Surveyor, Mr. F. Heather, West End Cottage, West End, near Southampton.

JANUARY 13.—**Manchester.**—PITCH.—The Tramways Committee invite tenders for the supply of pitch, for paving purposes. Specifications of Mr. J. M. McElroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

JANUARY 13.—**Wandsworth.**—MATERIALS.—The B.C. invite tenders for road materials and tar-spraying. Specifications of Mr. D. A. Nicholl, Town Clerk, Council House, Wandsworth, S.W.

JANUARY 15. **Derby.**—ROAD MATERIALS.—The County Council invite tenders for the supply of road materials. Further particulars from Mr. J. W. Horton, County Surveyor, County Offices, St. Mary's Gate, Derby.

JANUARY 17. — **Chelmsford.** — MATERIALS. — The Essex County Council invite tenders for the supply of road materials, team labour, &c. Forms of tender, of Mr. Percy J. Sheldon, County Surveyor, Chelmsford.

JANUARY 17.—**Plymouth.**—MATERIALS.—The T.C. invite tenders for materials used in the various sewers Schedules of Mr. T. P. Frank, Borough Engineer Municipal Offices, Plymouth.

JANUARY 17.—**Weston-super-Mare.**—ROAD MATERIALS. — The Somerset C.C. invite tenders for road materials and steam rolling. Forms of tenders from Mr. Edward Stead, county surveyor, Weston-super-Mare.

JANUARY 19.—**Altrincham.**—PIPES.—The U.D.C. invite tenders for the supply and delivery of about 3,000 lineal yds. of second quality socketed earthenware pipes (18 in., 15 in., 12 in. and 9 in. diameter); also about 50,000 4 in. agricultural field drain tiles. Forms of tender from the Engineer, Mr. C. E. Newton, 19, Cooper-street, Manchester.

JANUARY 20.—**Coventry.**—GRANITE SETTS.—The Tramways Committee invite tenders for the supply of 6,000 tons of Leicestershire or equivalent granite paving sets, 4 inches wide by 5 inches deep. Specification of Mr. T. R. Whitehead, General Manager and Engineer, Priestley's Bridge Depot, Coventry.

JANUARY 24.—**Howden.**—ROAD MATERIALS.—The R.D.C. invite tenders for the supply of broken whinstone, granite, limestone, slag, and tarred macadam. Forms of tender of Mr. Bernard Shaw, surveyor, Howden, East Yorkshire.

JANUARY 26.—**Ogmore.**—The Ogmore and Garw U.D.C. invite separate tenders for (a) embankment, roadway, and fencing, containing about 55,000 cubic yards of filling; (b) girder bridge of two spans of 53 feet and 27 feet, each with the necessary wing walls, abutments, etc., with an 11 ft by 10 ft. culvert in masonry, with brick arches, about 63 yards in length. (c) six stall urinal in glazed brickwork interior and rough cast exterior, with all necessary fittings complete. Quantities of the Council Offices, Brynmenyn, Glamorgan. Deposit £2 2s.

JANUARY 28.—**Islington.**—MATERIALS.—The B.C. invite tenders for materials required in the electricity department. Forms of tender of Mr. C. G. E. Fletcher, Town Clerk, Town Hall, Islington, N. 1.

JANUARY 28.—**London.**—RAILWAY MATERIAL.—The South Indian Railway Co., Ltd. invite tenders for (1) volute and helical springs for broad and metre gauge rolling stock; (2) eight steel single bolster timber trucks. Specifications of Mr. W. B. Reynolds, Finsbury-pavement House, London, E.C.2. Charge £1 each.

FEBRUARY 2.—**Camberwell.**—MATERIALS.—The B.C. invite tenders for stoneware drainpipe, etc. Forms of tender of Mr. F. J. Slater, Borough Engineer, Town Hall, Camberwell, S.E.

FEBRUARY 2, 1920.—**Madras.**—STONEWARE PIPES.—The Corporation of Madras, India, invite tenders for the supply of English stoneware pipes and specials, varying from 4 in. to 18 in. internal diameter, and aggregating a total length of about 67 miles. Forms of tender of Messrs. James Mansergh & Sons, agents to the Corporation, 5, Victoria-street, Westminster, London, S.W. 1. Fee, 5s. per set.

FEBRUARY 7.—**Norwich.**—MATERIALS, &c.—The Eastern Highways Committee of the Norfolk C.C. invites tenders for the supply of flints, gravel, chalk, team labour, haulage by mechanical power, tools, wheelbarrows, handcarts, &c., for the year. Specifications of Mr. W. W. Gladwell, County Surveyor, The Shirehouse, Norwich.

✱NO DATE.—**Middlesex.**—Tenders are invited by the Disposal Board for about 11½ tons of tinman's solder in cwt. bags.

ENGINEERING, IRON AND STEEL.

JANUARY 12.—**Glasgow.**—WIRING.—The Corporation invite tenders for the execution of the electric lighting installation in connection with the Copiawhill Area Housing Scheme. Schedules of Mr. W. W. Lackie, City Electrical Engineer, 75, Waterloo-street, Glasgow.

JANUARY 12.—**Southampton.**—PUMPS.—The Corporation invite tenders for supplying and fixing:—(1) Two 10 in. centrifugal pumps and motors, together with the necessary suction and delivery pipes, at the Pumping Station, Bevois Valley; (2) one 18 in. and one 24 in. centrifugal pump and motors, together with the necessary suction and delivery pipes at the Pumping Station, Northam. Particulars of the borough engineer (Mr. J. A. Crowther), Market Chambers, Southampton.

JANUARY 13.—**London.**—STEEL MATERIALS.—The Bombay, Baroda and Central India Railway Co. invite tenders for the supply of steel material. Specification of Mr. S. G. S. Young, Secretary, Offices, 110, Bishopsgate, E.C. 2. Fee, 20s.

JANUARY 20.—**Bournemouth.**—TRAMWAY TRACK.—The Tramways Committee invite tenders for reconstruction of permanent way (equal to about 12 miles of single track). Quantities of Mr. J. Bulfin, Tramways Offices, Lansdowne-crescent, Bournemouth. Deposit £3.

JANUARY 20.—**Coventry.**—TRAMWAY RAILS.—The Tramways Committee invite tenders for the supply of 1,000 tons of B.S. No. 4 steel tramway rails at 105 lb. per yard. Specifications of Mr. T. R. Whitehead, General Manager and Engineer, Priestly's Bridge Depot, Coventry.

JANUARY 21.—**London.**—HEATING.—The Metropolitan Asylums Board invite tenders for providing and fixing hot-water supply apparatus at the Eastern Hospital, The Grove, Homerton, E. 9. Specification at the office of the Board, Embankment, E.C. 4. Deposit £1.

JANUARY 26.—**Avonmouth.**—WHARF.—The Docks Committee invite tenders for the construction of a deep water ferro-concrete wharf about 590 feet long at the Royal Edward Dock, Avonmouth. Specification from Mr Thomas A. Peace, Engineer, Avonmouth Docks. Deposit £5.

JANUARY 29.—**Scarborough.**—FUEL ECONOMISER.—The Guardians of Scarborough Union invite tenders for the erection of a fuel economiser at their power station, the Workhouse, Scarborough. Particulars of Mr. J. W. Read, Clerk, 14, Dean-road, Scarborough.

FEBRUARY 3.—**Croydon.**—DESTRUCTOR.—The B.C. invite tenders for the construction of destructor furnaces, boilers, engines, &c., at South Norwood Farm. Forms of tender of the Borough Engineer, Town Hall, Croydon. Deposit, £3 3s.

MARCH 4.—**Johannesburgh.**—METERS.—The Municipal Council invite tenders for 1,000 ¾ in. water meters. Conditions of contract of the Council's London Agents, Messrs. E. W. Carling & Co., St. Dunstan's-buildings, St. Dunstan's-hill, London, E.C.3. Deposit 10s. 6d.

ROAD, SANITARY, AND WATER WORKS.

JANUARY 9.—**Cowes.**—ROADS.—The Cowes Ferry Committee invite schemes and tenders for covering the beaches of the Cowes and East Cowes sides of the steam ferry between high and low water mark with concrete, reinforced concrete, or other suitable material in such a way as to be safe for horse traffic on a steep gradient. Particulars of the Ferry Manager, Thetis Tower, Cowes.

JANUARY 12.—**Canterbury.**—ROADS.—The Roads Committee invite tenders for the construction of granite carriage ways upon the "Gladwell" system in the following highways: New Dover-road, about 11,000 sq. yds; Longport-street, about 4,400 sq. yds. Forms of tender of Mr. Arthur C. Turley, City Surveyor, Municipal Offices, Canterbury.

JANUARY 12.—**Gellygaer.**—ROADS.—The U.D.C. invite tenders for the first section of the new road between Tinyberten and Pergram, about three-quarters of a mile in length. Quantities of Mr. F. Read, Surveyor, Council Offices, Hengoed, Glam. Deposit, £2 2s.

JANUARY 12.—**Hoylake.**—VARIOUS.—The U.D.C. invite separate tenders for (1) completion of Parade Gardens; (2) formation of a Bowling Green, Walks, and Retaining Walls in the Upper Park, West Kirby. Quantities of the Surveyor, Town Hall, Hoylake.

JANUARY 12.—**London, S.E.**—The Guardians of the Lewisham Union invite tenders for repairs and partial reconstruction of drains at the Workhouse, High-street Lewisham, S E.

JANUARY 12.—**Loughton.**—ROADS AND SEWERS.—The L.U.D.C. invite tenders for the construction of a new road and the laying of sewers and surface water drains on the Habgood Estate, Loughton. Quantities of Mr. Horace White, F.R.I.B.A., Surveyor, High-road, Loughton, Essex. Deposit £1 1s.

JANUARY 14.—**Leeds.**—ROADS.—The Corporation invite tenders for concreting and tar macadamising in Queen-square. Quantities at the Highways and Permanent Way Department, 1, Swinegate, Leeds.

JANUARY 16. — **Kirkcaldy.** — WATERWORKS. — The Kirkcaldy District Committee of the County Council of Fife invite tenders for cutting tracks for and laying and jointing about 730 yards of 3 in. and 240 yards of 2-in. cast-iron pipes, erecting street wells, &c. Schedule of the Engineers, Messrs. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh. Deposit £1.

JANUARY 17.—**Rotherham.**—ROADS.—The Housing Committee invite tenders for the construction of roads and sewers connected with the Housing Scheme, on the Doncaster-road site, Rotherham. Quantities from Mr. Chas. A. Broadhead, Architect to the Housing Committee, St. George's Hall, Rotherham.

JANUARY 19.—**Easington.**—ROADS, SEWERS, &c.—The R.D.C. invite tenders for sewer construction, roadmaking, and laying of water and electric lighting mains, for housing schemes at Wingate (120 houses in all) and Thornley (114 houses in all). Quantities, of the Architect, J. Wilson Hays, A.R.I.B.A., Wingate, Co. Durham. Deposit £2 2s.

JANUARY 19.—**Manchester.**—SEWERS.—The Rivers Committee invite tenders for the construction of sewers along Burnage-lane and Fog-lane. Quantities at the City Engineer's Office, Town Hall, Manchester. Deposit, £2 2s.

JANUARY 24.—**Portishead.**—ROADS.—The U.D.C. invites tenders for the widening, straightening, and grading of a section of the Cleveland-road. Quantities of Mr. Frederick H. Smith, Surveyor, 1, Burlington place, Portishead.

JANUARY 26.—**Kirkcaldy.**—ROADS AND SEWERS.—The Kirkcaldy District Committee invite tenders for the formation of roads and sewerage works at East Wemyss Glebe site. Quantities of the Joint Architects, Messrs. William Williamson, F.R.I.B.A., and Geo. B. Dess, Royal Bank-buildings, Kirkcaldy. Deposit £1 1s.

JANUARY 26.—**Rowley Regis.**—SEWER, &c.—The U.D.C. invite tenders for (1) relaying about 95 yards length of 9-inch sewer in Hawes-lane, together with seven house-drain connections; and (2) forming, and generally restoring about 257 yards length of highway conditions at Dudley-road. Specifications, at the Council House, Old Hill, Staffordshire.

✱JANUARY.—**Guildford.**—The Guildford Town Council invite tenders for the formation and metalling of certain roadways, together with other necessary road work.

Auction Sales, Tenders, &c.

JANUARY 9.—**Sevenoaks, Kent.**—Messrs. H. Tufnell & Son, will sell by direction of the Disposal Board, huts, building material, &c., at the Royal Crown Hotel, Sevenoaks, Kent.

JANUARY 13.—**Castle Madoc.**—Messrs. Hibbard & Sons will sell by order of the Disposal Board at Castle Madoc, South Wales, stock of various kinds of timber.

✱JANUARY 15.—**London.**—Mr. Wm. F. Lang will sell at 101 and 102 (Arches) London-street, Brady-street, Bethnal Green, E. 1, salvage stock comprising Hessian canvas, roofing felt, wire nails, &c., and large quantity of tools.

JANUARY 20.—**Roehampton, S.W.**—Messrs. Green & Son will sell by direction of the disposal board, at R.A.F. Camp, Upper Richmond-road, Roehampton, S.W., huts and building materials.

JANUARY 20.—**Chelsea.**—Messrs. Knight, Frank & Rutley will sell at Chelsea, the historical and valuable site of Old Cheyne House.

✱JANUARY 22.—**London.**—The Assets Auctions Co., Ltd., will sell at 129, Newington-causeway, S.E. 1, the stocks of a paint works.

✱JANUARY 26, 27, 28, and FEBRUARY 2, 3 and 4.—**Surrey.**—Messrs. C. Bridger & Son will sell by direction of the Disposal Board the valuable and extensive Camp Buildings, including section and non-sectional corrugated, wood and brick built hutments, at Milford and Witney Camps, Surrey. Comprising a very large assortment of various sorts and sizes of huts.

✱JANUARY 27.—**Newbridge.**—Messrs. Joseph Hibbard & Sons will sell by order of the Board of Trade (without reserve) at Poulton's Mill, Newbridge, near Cadnam, Southampton, saw mill plant, machinery, &c.

✱JANUARY 28.—**Surrey.**—Messrs. Robert W. Fuller Moon & Fuller will sell, by order of the Disposal Board, at Kenley A. A. Park, Kenley Common, huts, plant, material, &c., including 1,762 yards of light railway, timber, &c.

✱JANUARY 29.—**London, N.**—Messrs. Daniel Watney & Sons will sell on "The Bitannia Estate" a large compact block of property about an acre in extent consisting of 12 shops.

NO DATE.—**Hanley.**—Sale by Private Tender by Order of the Disposal Board, Ministry of Munitions surplus chlorine gas cylinders, also welded steel gas tanks laying at Cylinder Depot, Abbey-road, Hanley, Staffs.

Competitions.

(See Competition News, page 56.)

Public Appointments.

✱JANUARY 10.—**Cricklade and Wootton Bassett.**—The Cricklade and Wootton Bassett R.D.C. invite applications for the position of Clerk of Works for their housing scheme.

✱JANUARY 10. — **Stafford.** — The Borough of Stafford invite applications for the appointment of a qualified Architectural Assistant in connection with the preparation of housing schemes.

✱JANUARY 12.—**Bilston.**—The Bilston U.D.C. invite applications for the following appointments:—(1) Chief Architectural Assistant; salary £360 per annum. (2) Junior Architectural Assistant; salary £200 per annum; (3) Clerk of Works; salary £250–£300 per annum.

JANUARY 12.—**Durham.**—The County Council of Durham invite applications for the appointment of a managing foreman painter for work in connection with the painting, colouring and renovating of Council Schools. Salary £300, rising by annual increments of £12 10s. to £350 per annum.

JANUARY 12. — **Reading.** — The County Borough of Reading invite applications for the post of Second Architectural Assistant.

✱JANUARY 12.—**Surbiton.**—The Surbiton U.D.C. invite applications for the appointment of Clerk of the Works for the purpose of their housing scheme.

JANUARY 16.—**London.**—The Metropolitan Asylums Board invite applications for the appointment of clerk in the Engineer-in-Chief's Dept. Commencing salary £150 per annum, rising £10 annually to a maximum of £200 with War Bonus at Civil Service rates (now £105 per annum).

✱JANUARY 17.—**Rochdale.**—The Housing Committee invite applications for the following temporary appointments:—(a) Architectural assistant, salary £250 per annum; (b) architectural assistant, salary £225 per annum.

✱JANUARY 19.—**Merton.**—The Merton and Morden U.D.C. invite applications for the appointment of Clerk of Works in connection with their housing scheme.

NEW COMPANIES.

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, 116 and 117, Chancery Lane, W.C.2, from the documents available at the Companies Registry :—

ART CONCRETE CO., LTD. (160,242). 19, Netherwood-road, Kensington, W.14. Registered November 3, 1919. Nominal capital, £2,000.

BRITISH LEAN CO., LTD. (160,096). Registered October 29, 1919. Builders, contractors, decorators, concrete and other engineers. Nominal capital, £50,500.

BUCKLEY JUNCTION METALLIC BRICK CO., LTD. (160,280). Registered November 4, 1919. Nominal capital, £10,000.

CAERLEON BRICK AND PIPE CO., LTD. (159,963). 26, Dock-street, Newport, Mon. Registered October 25, 1919. Nominal capital, £30,000.

W. F. DREW, LTD. (159,130). Chatford, Gloucestershire. Registered September 25, 1919. Builders and contractors. Nominal capital, £10,000.

FESTINIOG QUARRIES, LTD. (160,255). 9, St. Martins East, Leicester. Registered October 3, 1919. Nominal capital, £10,000.

SAMUEL GEE & SONS, LTD. (160,169.) Reliance Works, Ripley, Derby. Registered October 30, 1919. Builders and contractors. Nominal capital, £20,000.

GRAHAM & JESSOP, LTD. (159,970). Registered October 25, 1919. Builders and contractors. Nominal capital, £10,000.

DAVID KING, LTD. (159,925). 82, Queen-street, E.C.4. Registered October 24, 1919. Builders, contractors, sanitary and general engineers. Nominal capital, £10,000.

KNITSLEY FELL GANISTER CO., LTD. (158,884). 4, London Wall Buildings, E.C. Registered September 18, 1919. Manufacturers of bricks, tiles and ceramic ware. Nominal capital, £25,000.

LIGHTNING CONSTRUCTION CO., LTD. (159,109). Registered September 25, 1919. Nominal capital, £50,000.

LITTLE DOCK MILL BRICK CO., LTD. (158,511). Registered September 4. Brick, tile and pipe manufacturers. Nominal capital, £12,500.

LONDON & NORTHERN TRADING CO., LTD. (158,973). Registered September 20, 1919. Timber merchants, sawmill proprietors, &c. Nominal capital, £1,000,000.

MIDLAND ASSOCIATED BUILDERS, LTD. (159,451). Registered October 9, 1919. Nominal capital, £10,000.

MOORE BROS. (RAWTENSTALL), LTD. (158,949). Burnley-road Saw Mills, Rawtenstall, Lancaster. Registered September 19, 1919. Joiners, builders and contractors. Nominal capital, £5,000.

MORRISTON SILICA BRICK CO., LTD. (158,839). Ynisderw-road, Pontardawe, Glamorgan. Registered September 16, 1919. Nominal capital, £10,000.

PEART & Co., LTD. (158,907). 50, Fredrick-street, Sunderland, Co. Durham. Registered September 18, 1919. Quarry masters and stone merchants. Nominal capital, £1,000.

PENGWERN QUARRIES, LTD. (159,115). Registered September 25, 1919. Nominal capital, £10,000

PENNLANDS BRICK AND TILE CO., LTD. (159,868). 33, Mackenzie-street, Slough. Registered October 22, 1919. Nominal capital, £9,000.

PLOWMANS' BRICKFIELDS, LTD. (159,377). The Brickfields, Upper Edmonton, N. Registered October 7, 1919. Nominal capital, £75,000.

EDMUND ROBSON & CO., LTD. (158,923). St. Peter's Saw Mills, Glasshouse-street, St. Peters, Newcastle-on-Tyne. Registered September 19, 1919. Timber merchants and sawmill proprietors. Nominal capital, £15,000.

SANKEY & Co., LTD. (159,221). Creek Wharf, Hammersmith, W. Registered September 30, 1919. Builders' merchants, &c. Nominal capital, £20,000.

SLEAFORD BRICK CO., LTD. (158,842). 20 Northgate, Sleaford, Lincolnshire. Registered September 16, 1919. Nominal capital, £35,000.

STRONCRETE MANUFACTURING CO., LTD. (160,086). Temple Chambers, 39, Old Christchurch-road, Bournemouth. Registered October 28, 1919. Concrete manufacturers and terrazzo and composition floor makers. Nominal capital, £25,000.

TONDU BRICKWORKS CO., LTD. (160,366). Tondu Brickworks, Aberkenfig, Glam. Registered November 6, 1919. Nominal capital, £60,000.

WAILES DOVE BITUMASTIC, LTD. (160,236). 5, St. Nicholas-buildings, Newcastle-upon-Tyne. Registered November 1, 1919. Manufacturers of enamels, solutions, tank top coverings, cements, paints and compositions. Nominal capital, £200,000.

YORKSHIRE DECORATIVE MATERIALS CO., LTD. (160,341). 177, Spring Bank, Kingston-upon-Hull. Registered November 5, 1919. Nominal capital, £25,000.

THE IRON-MOULDERS' STRIKE.

A PROVISIONAL settlement has been arrived at between the Engineering Employers' Association and the three unions involved in the iron-moulders' strike, and it is to be hoped that before this note is published this settlement will be confirmed by the members of the unions and that this disastrous dispute may finally be terminated. This dispute has not only involved many persons directly concerned, but a large number of men in other industries dependent upon that in which the dispute has been in existence for over three months, and has crippled the engineering trade and delayed the production and renovation of much-needed articles, including engines, trucks, &c., needed for transport.

The Minister of Labour and the Parliamentary Committee of the Trade Union Congress are to be congratulated on having grappled with this problem, and assisted the parties to come to terms. A settlement has been delayed by a difficulty that arose from more than one trade union and more than one question being involved, and the Parliamentary Committee is a body admirably adapted to smooth away obstacles arising out of a difference of opinion or divergence of view between trade unions.

On the merits of the dispute we express no opinion, but we congratulate the parties concerned on having inaugurated the New Year by at any rate provisionally settling one of the most obstinate disputes of last year. Prosperity seems awaiting the country if all persons will seize the golden opportunity and avoid disputes which, whatever their result in the end, do more harm than good even to those directly concerned, and involve those indirectly concerned in hardship and loss.

Disabled Men for the Building Trade.

Will Mr. G. Crawshaw, who communicated with the L.C.C. School of Building on the subject of the disabled soldiers and sailors being trained there for positions in the building industry, kindly send his address to the Principal L.C.C. School of Building, Ferndale-road, Clapham, S.W.4.

A Christmas Outing.

During the Christmas holidays, an outing to London was given by Mr. and Mrs. J. H. Kerner-Greenwood (of Messrs. Kerner-Greenwood & Co., Ltd., King's Lynn) to the discharged and demobilised sailors and soldiers in the employ of the firm. The party, which numbered twenty, left Lynn by the 7.41 a.m., and on arrival at Liverpool-street, a char-a-banc conveyed the party around the city. At a luncheon at the Tavistock Hotel, a vote of thanks, proposed by Mr. C. S. Slator, was accorded to Mr. and Mrs. Kerner-Greenwood for giving the men such a splendid outing. After the lunch, the party visited His Majesty's Theatre, and after the performance caught the 5.52 p.m. train from Liverpool-street. The arrangements were in the hands of Mr. F. Matthews, a member of the office staff, who carried through the day's programme to the entire satisfaction of all.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him *not later than first post on Wednesday*.

* Denotes *accepted* † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modifications*.

ALCESTER.—For the provision of about 150 yards of 18 in. and about 200 yards of 9 in. stoneware pipe drain, &c., for the R.D.C. Messrs. Wilcox & Raikes, engineers, 63, Temple-row, Birmingham :—

*E. E. Jeavons & Co., Dudley	
Port	£937 9 11
Lewis & Taplin, Birmingham	960 0 0
Wm. Muirhead, Macdonald, Wilson & Co., London ..	974 19 10
Alcester Builders, Ltd., Alcester	993 3 6
Wm. Thorpe, Birmingham ..	1,033 10 0
H. C. Pullar & Co., Manchester	1,057 18 6

ALDERSHOT.—House and garage at York-road, Aldershot, for Mr. W. R. Holderness. Mr. P. H. E. Wells, architect, 56, Church-lane, Aldershot. Quantities by architect :—

*Geo. Kemp & Co., Aldershot	£2,988
J. Cockerell, Aldershot	3,158
Cæsar Bros.	3,080
Crosby & Co., Ltd., Farnham.....	2,962

BATH.—For alterations at Charning Down Farm, for the Corporation :—

*S. Ambrose	£115

BLACKBURN.—For the erection of 24 cottages (types "W" and "X"), on the Green-lane site, Cherry Tree, for the Housing Committee. Mr. A. T. Gooseman, Borough Engineer, Town Hall, Blackburn :—

‡J. Highton & Sons, Blackburn—£938 5s. per house.
25 tenders were received.

BUCKINGHAM.—For the erection and completion of (*a*) 40 parlour houses, "B" type, in blocks of four; (*b*) 8 non-parlour houses, "A" type, in pairs, for the Corporation. Mr. G. Belson Chilvers, M.Inst.M.E., F.I.S.E., Buckingham.; Mr. Geo. W. Chilvers, F.I.S.E., &c., 20, Heathfield-gardens, Chiswick, W. 4 :—

*(*a*) Charles Jeyes, Luton ..	£32,000 0 0
Parnell & Son, Rugby.. ..	38,000 0 0
W. H. Thomas, Buckingham..	36,996 12 6
*(*b*) Chas. Jeyes, Luton	6,280 0 0
Parnell & Son, Rugby.....	7,120 0 0
W. H. Thomas, Buckingham..	7,454 15 4

CHELMSFORD.—For laying surface water drains &c., at the Borough Cemetery, for the T.C. :—

*W. & C. French, Buckhurst Hill	£565 13 9
A. J. Arnold	805 3 6
T. Adams	766 0 6
P. G. Gunner	650 0 0
H. Potter	621 0 0

CHELMSFORD.—For repairs to 69, Duke-street, for the Essex County Council :—

*F. J. French	£347 10

CHESTERFIELD.—For the construction of new streets and sewers in connection with the Boythorpe housing scheme, for the Corporation :—

	Contract No. 1. £ s. d.	*Contract No.* 2. £ s. d.
*H. Ashley, Mansfield ..	23,784 12 7	2,336 17 2
T. Beighton, Doe Leigh, nr. Chesterfield ..	37,211 12 11	3,610 11 6
J. H. Macdonald & Co., Southwick	35,009 0 0	2,991 0 0
J. Nadin, Sheffield	35,945 11 6	3,651 13 9
Johnson & Langley, Leicester	30,720 0 10	4,160 0 0
G. H. Greasley, Leicester	30,429 10 10	4,050 0 0
C. S. Tomlinson, South Normanton.....	27,216 0 0	2,475 16 0
Borough Engineer and Surveyor's Estimate	28,569 14 2	2,582 9 11

H.M. OFFICE OF WORKS.—Tenders accepted during November :—

Building Works, &c.: Battersea, alterations, &c., to various houses, Leslie & Co., Ltd., London, W.; Beckenham, alterations, &c., to various houses, W. J. Scudamore & Sons, London, S.E.; Clacton-on-Sea, erection of new post office, A. S. Franklin, London, W.; Dover, Duke of York's School, repairs to tar paving, A. C. W. Hobman & Co., Ltd., London, S.E.; Edinburgh, Scottish National Portrait Gallery, &c., wood block flooring, Hollis Bros., & Co., Ltd., Hull; Hackney, alterations, &c., to various houses, Pitcher Construction Co., Ltd., London, N.; Hammersmith, erection of new branch post office, Frank L. Linnell, London, S.W.; Harrogate, Radlyn Schools, adaptation, &c., W. W. Stott, Harrogate; Isleworth, erection of new post office, W. H. Gaze & Sons, Ltd., Kingston-on-Thames; Kingsway, alterations, &c., at Empire, India and Canada Houses, Higgs & Hill, Ltd., London, S.W.; Paddington, alterations, &c., to various houses, Leslie & Co., Ltd., London, W.; Pirbright Cattle Testing Station, repairs to farm house, Crosby & Co., Ltd., Farnham; Plymouth, adaptation of huts, &c., at Saltash, Frank Butterworth, Manchester; St. Marylebone, alterations, &c., to various houses, Pitcher Construction Co., Ltd., London, N.; St. James's Palace, oak panellings, J. Mowlem & Co., Ltd., London, S.W.; St. Pancras, alterations, &c., to various houses, Pitcher Construction Co., Ltd., London, N.; Salisbury, extension of station sorting office, Wakeham Bros., Plymouth; Shoreditch, erection of hut, W. Silk & Son, Ltd., London, E.; Westminster, alterations, &c., to various houses, John Mowlem & Co., Ltd., London, S.W.; Woolwich, Well Hall Estate, construction of surface water drains, John Mowlem & Co., Ltd., London, S.W.

(*Continued on page* 74.)

PRICES CURRENT OF MATERIALS.*

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge. £ s. d.

Best Stocks 4 5 0

Per 1000, Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons	2 18 0	Best Blue Pressed Staffordshire ...	9 11 0
Best Stourbridge Fire bricks	10 10 0	Do. Bullnose ..	9 13 6
		Blue Wire Cuts	7 18 6

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers ..	23 0 0	D'ble Str'tch'rs	30 10 0
		D'ble Headers	27 10 0
Headers.....	22 10 0	One Side and two Ends ..	31 10 0
Quoins. Bullnose and 4½in.		Two Sides and one End	32 10 0
Flats	28 10 0	Splays and Squints.....	30 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

	s. d.		
Thames Ballast	16 6	per yard,	delivered
Pit Sand	10 3		
Thames Sand	21 0	.. ..	2 miles
Best Washed Sand	20 0	.. ..	radius
½in. Shingle for Ferro-Concrete	19 0	.. ..	Paddington.
¼ in.	20 0	.. ..	

Per ton, delivered in London area.

	£ s. d.		£ s. d.
Best Portland Cement	3 13 6	..	3 16 6

6/6 alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above. 5 0

Best Ground Blue Lias Lime 2 16 0 at rly. depot.

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 6d. each and credited at 2s. each if returned in good condition within three months.

Grey Stone Lime ..... 61s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 42s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube.....	2 6
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	2 1½
Do do. delivered on road waggons at Nine Elms Depot	2 2½
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Milcage Station G.W.R., per ft. cube	3 6½
Do. do. delivered on road waggons at above stations, per ft. cube..	3 7½
White basebed, 3d. per ft. cube extra.	
NOTE.—½d. ft. cube extra for every foot over 20 ft. average.	
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station London.	s. d.
Scappled random blocks .....Per Ft. Cube	7 6
6 in. sawn two sides landings to sizes (under 30 ft. super.) .....Per Ft. Super	5 6
6 in. rubbed two sides, ditto ..... „	6 2
3 in. sawn two sides slabs (random sizes) „	2 5
2 in. to 2½ in. sawn one side slabs (random sizes) ..... „	1 5½
1½ in. to 2 in. ditto, ditto ..... „	1 3
HARD YORK— Delivered at any Goods Station London.	
Scappled random blocks .....Per Ft. Cube	6 6
6 in. sawn two sides landing to sizes (under 40ft. super.) .....Per Ft. Super	5 6
6 in. rubbed two sides ditto ..... „	6 0
4 in. sawn two sides slabs (random sizes) „	2 10½
3 in. ditto, ditto „	2 2
2 in. self-faced random flags ..Per Yard Super	6 10

WOOD.

(The following prices are the Controller's prices fixed Feb. 7, 1919. The control is now removed.)

Pursuant to paragraph 3 of the Timber Control Order, 1918, the Controller of Timber Supplies hereby gives notice that until further notice the following shall be the maximum prices at which imported timber may be sold. These prices are per standard landed and in store.

WHITE SEA REDWOOD.

Inches	1st £ s.	2nd £ s.	3rd and unsorted £ s.	4th £ s.
4 × 11	54 10	52 10	49 10	47 10
4 × 9	50 10	48 10	45 10	43 10
4 × 8	47 10	45 10	42 10	40 10
4 × 7	47 10	45 10	42 10	40 10
3 × 8	46 10	44 10	41 10	39 10
3 × 7	46 0	44 0	41 0	39 0
3 × 6	45 10	43 10	40 10	38 10
3 × 5	45 10	43 10	39 10	37 10
2½ to 3 × 11.....	53 10	51 10	48 10	46 10
2½ to 3 × 9.....	48 0	46 0	43 0	41 0
2½ × 7 to 8.....	46 0	44 0	41 0	39 0
2½ × 6	45 10	43 10	40 10	38 10
2½ × 5	45 10	43 10	39 10	37 10
2 × 11	53 10	51 10	48 10	46 10
2 × 9	48 0	46 0	43 0	41 0
2 × 8	46 10	44 10	41 10	39 10
2 × 7	46 0	44 0	41 0	39 0
2 × 6	45 10	43 10	40 10	38 10
2 × 5	44 10	42 10	39 10	37 10
2 × 4	44 10	42 10	40 0	38 0

UNSORTED LARCHWOOD at 3rd Archangel Redwood Prices.

Boards, 1st and 2nd, £1 10s. extra.
Boards 3rd and 4th, £1 extra.

FEATHER EDGED BOARDS, £40 10s. per std.
SAWN LATHS, 3s. per bundle.

U/S SLATING BATTENS (yellow and white and strips), £36.

WOOD (*Continued*).

SWEDISH AND NORWEGIAN FLOORING AND MATCHING.

U/S Red and White.

Per 100ft. super.	Per 100 ft. super
1¼in. P.E. at 60/-	⅝in. P.E. at 30/-
1½in. P.E. at 50/-	¾in. P.E. at 25/6
1in. P.E. at 40/-	⅛in. P.E. at 20/6
⅝in. P.E. at 35/-	

T. & G. and Match Lining at 6d. per square extra.

PLANED BOARDS—11 in., £45 per standard; 10 in., £43 per standard; 9 in., £43 per standard; 8 in., £41 per standard.

YELLOW PINE.

Inches	1st £ s.	2nd £ s.	3rd £ s.	4th £ s.
3 × 12 and up ..	67 0	55 0	50 10	44 0
3 × 11.....	64 0	53 0	48 10	44 0
3 × 10.....	58 0	48 0	44 0	42 0
3 × 9.....	57 0	47 0	43 0	41 0
3 × 8.....	55 0	45 0	42 0	39 0
3 × 7.....	55 0	45 0	42 0	39 0
3 × 6 and down	52 0	42 0	40 0	37 0

For complete specification and controlled prices, see "London Gazette," February 7, 1919.

Dry Wainscot Oak, per ft. super, as inch	0	2	6	to	0	3	0
½ in. do. do.	0	2	0	to	0	2	6
Dry Mahogany—Honduras, Tabasco, African, per ft. super, as inch	0	2	6	to	0	3	0
Cuba, Mahogany	0	3	6	to	0	4	0
Teak (Rangoon, Moulmein or Java), per load.. ..	60	0	0	to	85	0	0
American Whitewood planks, per ft. cube ..	0	18	0	to	1	0	0
Scotch Glue, per cwt.	5	5	0	..		—	
Liquid Glue, per gallon ..	0	17	0	..		—	

SLATES.

1st quality slates from Bangor or Portmadoc in truck load delivered London area. Per 1,000 of 1,200.

		£ s. d.
Best Blue Bangor Slates,	24 by 12	48 10 0
„ „	22 by 12	35 0 0
First quality „	22 by 11	32 5 0
„ „	20 by 12	32 0 0
Best Blue Portmadoc	20 by 10	27 10 0
„ „	18 by 10	22 0 0
First quality „	18 by 9	18 0 0
„ „	16 by 10	17 0 0
„ „	16 by 8	13 5 0

TILES.

Per 1,000 f.o.r. London.

	£ s. d.
Best machine-made tiles from Broseley or Staffordshire district.....	6 2 6
Ditto hand-made ditto.....	6 7 6
Ornamental ditto	6 10 0
Hip and valley tiles (per dozen)	0 14 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

	s. d.
R. S. Joists, cut and fitted	28 0 0
Plain Compound Girders	30 0 0
Stanchions	32 0 0
In Roof Work	36 0 0

WROUGHT-IRON TUBES AND FITTINGS—(Discount off List for lot of not less than £10 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Sizes up to and including 2 in. Tubes.	Fittings.	Sizes 2½ in. to 6 in. Tubes.	Fittings.
Gas	26½	32½	31½	37½
Water	18½	28½	26½	35
Steam	11½	25	21½	32½
Galvanised Gas ..	7½	25	12½	30
„ Water	+ 2½	+ 21½ ..	+50	+ 27½
„ Steam	+ 12½	+ 17½	+2½	+ 25

L.C.C. COATED SOIL PIPES—London Prices ex works.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6 fts..	4 7	.. 3 4	.. 4 0
2½ in. „ ..	5 6	.. 3 8	.. 5 0
3 in. „ ..	6 9	.. 4 0	.. 6 0
3½ in. „ ..	7 8	.. 5 0	.. 7 0
4 in. „ ..	7 11	.. 5 8	.. 8 0

RAIN-WATER PIPES, &c.

	Pipe. s. d.	Bends, stock angles. s. d.	Branches, stock angles. s. d.
2 in. per yd. in 6fts, plain	3 4	.. 1 10	.. 2 6
2½ in. „ „ ..	3 9	.. 2 2	.. 3 0
3 in. „ „ ..	4 6½	.. 2 8	.. 4 0
3½ in. „ „ ..	5 4	.. 3 2	.. 4 8
4 in. „ „ ..	5 7½	.. 3 10	.. 5 8

L.C.C. DRAIN PIPES.—9 ft. lengths. London Prices. 4 in., 10s. .. 5 in., 12s 6d. .. 6 in., 15s.

Per ton in London.

	£ s. d.		£ s. d.
IRON— Common Bars	28 10 0	to	27 10 0
Staffordshire Crown Bars — good merchant quality	27 0 0	..	27 10 0
Staffordshire "Marked Bars"	28 0 0	..	29 0 0
Mild Steel Bars	23 10 0	..	24 10 0
Steel Bars, Ferro-Concrete quality, basis price ..	23 0 0	..	24 0 0
Hoop Iron, basis price ..	29 0 0	..	30 0 0
„ „ Galvanised ..	40 0 0	..	—
Sheet Iron Black— Ordinary sizes to 20 g. ..	27 10 0	..	28 10 0
„ „ 24 g. ..	28 10 0	..	29 10 0
„ „ 26 g. ..	30 0 0	..	31 0 0
Sheet iron, Galvanised flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g. ..	37 10 0	..	—
Ordinary sizes to 22 g. and 24 g.....	37 10 0	..	38 0 0
Ordinary sizes to 26 g. ..	38 10 0	..	39 10 0

METALS (*Continued*).

Per ton in London.

	£ s. d.		£ s. d.
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g. ..	39 0 0	..	—
„ „ 22 g. and 24 g.	39 10 0	..	—
Ordinary sizes to 26 g. ..	42 10 0	..	—
Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g.....	37 10 0	..	—
Ordinary sizes, 22 g. and 24 g.....	38 0 0	..	—
Ordinary sizes, 26 g.	39 10 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker.....	30 0 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.....	30 10 0	..	—
Best Soft Steel Sheets, 26 g.	32 0 0	..	—
Cut Nails, 3 in. to 6 in.	32 0 0	..	33 0 0

(Under 3 in. usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.
LEAD Sheet, English, 4 lb. and up	57 10 0	..	—
Pipe in coils	58 0 0	..	—
Soil Pipe	60 10 0	..	—
Compo pipe	61 0 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills ..... per ton	37 10 0	..	—
Do., ex country, carriage forward..... per ton	38 10 0	..	—

COPPER—

Strong Sheet ....per lb.	0 2 3	..	—
Thin „ .... „	0 2 4	..	—
Copper nails .... „	0 2 3	..	—
Copper wire .... „	0 2 4	..	—
TIN—English Ingots „	0 1 3	..	—
SOLDER—Plumbers' „	0 1 3	..	—
Tinmen's..... „	0 1 5	..	—
Blowpipe ..... „	0 1 8	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.
15 oz. fourths .... 7½d.	32 oz. fourths	10½d.
„ thirds ..... 8d.	„ thirds	11½c.
21 „ fourths .... 8½d.	Fluted, Obscured and Enamelled Sheet,	
„ thirds ..... 9½d.	15 oz.	7½d.
26 „ fourths .... 9½d.	21 „	8½d.
„ thirds ..... 10½d.		

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
Rolled plate	4½d.
Rough rolled and rough cast plate.....	5½d.
Rough rolled and rough cast plate.....	5½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6½d.
Ditto, tinted	8½d.
Rolled Sheet	6d.
White Rolled Cathedral.....	6d.
Tinted do.	8d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes.....	per gallon	0 10 6
„ „ „ in barrels	„	0 10 9
„ „ „ in drums	„	0 10 11
Boiled „ „ in barrels	„	0 10 3
„ „ „ in drums	„	0 10 5
Turpentine in barrels	„	0 12 6
„ in drums (10 gall.) ..	„	0 13 0
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		81 0 0
GENUINE WHITE LEAD PAINT— "Nine Elms," "Park," "Supremus," and other best brands (in 14 lb. tins) not less than 5 cwt. lots.. per ton delivered		111 0 0
Red Lead, Dry (packages extra) ..	per ton	65 0 0
Best Linseed Oil Putty	per cwt.	1 11 3
Filocol.....	per cwt.	0 16 6
Size. X D Quality.....	fkn.	0 0 0

VARNISHES, &c.

	Per gallon. £ s. d.
Oak Varnish.....Outside	0 18 0
Fine ditto ..... ditto	1 0 0
Fine Copal ..... ditto	1 1 6
Pale Copal ..... ditto	1 2 6
Pale Copal Carriage ..... ditto	1 4 6
Best ditto ..... ditto	1 14 6
Floor Varnish..... Inside	0 19 0
Fine Pale Paper ..... ditto	0 18 0
Fine Copal Cabinet ..... ditto	1 2 6
Fine Copal flatting ..... ditto	1 0 6
Hard drying Oak ..... ditto	0 18 0
Fine Hard drying Oak ..... ditto	0 19 0
Fine Copal Varnish ..... ditto	1 0 6
Pale ditto ..... ditto	1 2 6
Best ditto ..... ditto	1 14 6
Best Japan Gold Size.....	0 19 0
Best Black Japan	1 2 0
Oak and Mahogany Stain	1 1 0
Brunswick Black	0 14 0
Berlin Black.....	0 19 0
Knotting	1 11 0
French and Brush Polish	1 2 0
Liquid Driers in Terebine	0 17 0
Curacao Black Enamel	0 7 0

* The information given on this page has been specially compiled for THE BUILDER and is copyright. Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

TENDERS—*continued from page 72.*

Engineering Services: Alexandra Palace, steam heating apparatus, H. J. Cash & Co., Ltd., London, S.W.; Crewe, Lactose Factory, vacuum pan, &c.; Aluminium Plant and Vessel Co., Ltd., London, S.W.; Crystal Palace, temporary gas heating, British Commercial Gas Association, London, S.W.; flax factories, mild steel chimneys, Frederick Braby & Co., Ltd., London, S.E., and Hartley & Sudgen, Ltd., Halifax; flax factories, boiler and pipe covering, Lonsdale Bros., Ltd., Blackburn; Harrogate, Radlyn Schools, heating and hot water service, H. Braithwaite & Co., Ltd., Leeds; Mount Vernon, Hampstead, installation of refrigerating plant, E. West & Beynon, Ltd., London, S.E.

HORSHAM.—Erection of 18 houses for the U.D.C.:
*Cook & Sons £14,208

LONDON.—For renovation of 6, May-street, Fulham, for the Metropolitan Water Board:—
*J. Mayo & Co., Clapham..... £165
Messrs. Hills, Edgware-road..... 169
Chapman & Son, Hammersmith..... 184
Whitby Bros., Holborn..... 278

LONDON.—For repairs at 62, Kensal-road, for the Metropolitan Water Board:—
*Messrs. Hills, Edgware-road.... £96 10 0
Handover & Sons, Edgware-road 148 0 0
Whitby Bros. 195 14 0

LONDON (ISLINGTON).—For conversion of No. 13, Highbury New Park, and No. 93, Highbury-quadrant; making four flats in each case. Mr. E. C. P. Monson, Architect to the Housing Committee, Finsbury-pavement House, E.C. 2:—
13, Highbury New Park:
*Thomas Shillitoe, Upper Norwood .. £1,150
93, Highbury Quadrant:
*Thomas Shillitoe, Upper Norwood .. 1,180

LONDON.—For the demolition of a brick chimney shaft, about 102 ft. high, and the erection of a one-storied workshop (2,500 super. ft. in area), for the Paddington Borough Council.
*R. Merton Hughes, Baron's Court, W. £1,775 15 9

NORTHAMPTON.—For the erection of ten pairs of houses of the four-bedroom type on the Wellingborough Road frontage of Abington Lodge Farm, for the Corporation:—
*G. F. Sharman ..... £2,179 per pair
W. J. & A. H. Pullen ..... 2,610 do.
A. L. & H. W. Chown ..... 2,319 do.
Glenn Bros. ..... 2,265 do.
W. C. Throssell ..... 2,250 do.

NORTHAMPTON.—For builders' work in connection with the heating of various schools, for the Corporation:—
*G. W. R. King, Vernon Terrace School.. £440 10 0
*Beardsmore & West, Kettering-road School 425 0 0
*Beardsmore & West, Campbell-square School 650 0 0
*G. W. R. King, Military-road School.... 164 10 0
*Beardsmore & West, Stimpson-avenue School 798 0 0
*G. W. R. King, Far Cotton School..... 830 0 0
*W. Samwell, Wellington-place School .. 284 15 5
For engineer's work at same schools:—
*S. Booth Horrocks, Kettering-road School .. £1,655
*Seaton & Peet, Military-road School 1,580
*Buckley's (Lon.), Ltd., Far Cotton School .. 1,302
*S. Booth Horrocks, Vernon-terrace School .. 1,205
*Seaton & Peet, Stimpson-avenue School 1,584
*Young, Austin & Young, Campbell-square School 1,710
*S. Booth Horrocks, Wellington-place School.. 319

SHEPSHED.—Sixty houses, for the Urban District Council housing scheme. Mr. Frank H. Brombead, A.R.I.B.A., architect, 18, Grove-street, Retford, Notts.:—

	Type A, Non-parlour.	Type B. Parlour.
Bosworth & Lowe (Nottingham)	£747 0 0	£798 0 0
W. Marlow & Sons, Ltd. (Sheffield)	742 10 0	795 0 0
C. B. Hansford (Shepshed)..	693 0 0	735 0 0
W. Alban Richards & Co. (London)	665 15 0	716 11 10
G. W. Blood (Shepshed) ..	637 14 2	666 2 6
Atkin Bros. (Shepshed) ..	637 14 2	666 2 6½

SOUTH SHIELDS.—For cleaning and painting (*a*) Mowbray Infants' School, and (*b*) Ocean-road Infants' School, for the Corporation:—
* (*a*) R. C. Hill ..... £153 15 [illegible]
* (*b*) J. T. Williamson 120 0

SUNBURY-ON-THAMES.—For the erection of 20 houses fronting the Nursery-road, for the U.D.C. Mr. J. H. Norris, architect, 51, High-street, Guildford:
*W. Jones & Sons, Westminster £17,811
Cook & Sons, Crawley, Sussex..... 17,988
Edwards Construction Co., Blackheath 19,410
W. H. Gaze & Sons, Ltd., Kingston-on-Thames 20,189
Collinson & Co. 21,474
S. N. Soole & Co., Ltd..... 21,676
G. Longley & Co..... 27,738

YORK.—For the work connected with establishment of the School Clinic in Piccadilly, for the Corporation:—
*A. E. Challenger & Co., Plumber's Work.. £107 10
*W. Usher, Joiner's Work 201 14
*W. Birch & Sons, Ltd., Draining 65 15
*York Gas Co., Gas Fittings 105 0
*W. Dove & Sons, Stoves 70 9

TRADE NEWS.

The National Radiator Co., Ltd., has issued a catalogue of a provisional nature, intended to cover the transition period. It embodies particulars of the various sizes of "Ideal" "G" series boilers, particulars of two new sizes of "Ideal" domestic boilers (Nos. 14–D and 15–D), new patterns of "Ideal" towel rails (Nos. 1A, 9, 9A, 10 and 11), and previous regular patterns of these fittings. The Company is now only listing the "Ideal" plain radiators, having been compelled temporarily to discontinue the manufacture of the ornamental types in order to concentrate on the patterns most in demand. A new heavy pattern "Ideal" gate valve and a new size of "Beaver" pipe cutter (No. 10) with a range of 2½ to 4 inches are illustrated. Some new types of "Borden" pipe stocks are also shown.

The Dunlop Rubber Co. has issued a leaflet dealing with the tyre loads and inflation pressures needful to ensure the best service, and the factors that determine tyre life are summarised.

Messrs. MacAndrews & Forbes, Ltd., have been awarded a Diploma of Excellence for their "Fiberlic" board exhibited at the Housing and Health Exhibition inaugurated by the Corporation of Glasgow.

An amalgamation has been effected between Messrs. Pinchin, Johnson & Co., Ltd., and Messrs. Wilkinson, Haywood & Clark, Ltd., varnish, paint and colour manufacturers. After thirty years' active association with the firm, Mr. Albert C. Hill, acting on medical advice, has relinquished his position of managing director of Messrs. Pinchin, Johnson & Co., Ltd. Mr. Hill joined the firm in 1891, and was taken into partnership in 1892. In 1906 he originated the "Minerva" Standard Colour Competition, which resulted in the compilation of the well-known "Minerva" Standard Colour Card. Mr. Hill took a great interest in everything connected with the welfare of the paint and varnish trade, and served on many committees of the National Federation of Paint, Colour and Varnish Manufacturers and the United Kingdom Linseed Oil Consumers' Association.

Non-Ferrous Materials.

The following stocks (exclusive of old metal and scrap) in this country were in possession of the Minister of Munitions on January 1, 1920:—Copper, 10,095 tons; spelter, G.O.B., 10,318 tons; spelter, refined, 9,754 tons; aluminium, 7,084 tons; soft pig lead, 54,975 tons; nickel, 1,650 tons; antimony regulus, 2,775 tons. A proportion of these stocks has already been sold to the trade for forward delivery.

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